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DAN'L E. HUGHES, M.D.,

DEMONSTRATOR OF CLINICAL MEDICINE, JEFFERSON MEDICAL COLLEGE.

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A

COMPEND

OF THE

PRACTICE OF MEDICINE.

ESPECIALLY ADAPTED FOR THE USE OF
MEDICAL STUDENTS.

BY

DAN'L E. HUGHES, M.D.,

DEMONSTRATOR OF CLINICAL MEDICINE IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA; FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, ETC.

IN TWO PARTS.

PART I.

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PHILADELPHIA:
P. BLAKISTON, SON & CO.,
1012 WALNUT STREET.
1883.

TO

HIS ESTEEMED FRIEND AND TEACHER,

J. M. DA COSTA, M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE

IN THE

JEFFERSON MEDICAL COLLEGE,

THIS WORK

IS RESPECTFULLY DEDICATED BY

THE AUTHOR.

PREFACE.

This "Compend" is the outgrowth of the author's system of notes, as employed in the Quiz-room during the past four years.

Written for students of medicine, it has been his aim to present, in as compact a form as is consistent with clearness and completeness, the most essential features of the Practice of Medicine.

From the inability of students to follow the lectures by reading large text-books, it is believed that this Compend will be a valuable aid in the acquisition of the fundamental facts, although it is not to be considered as a substitute for the more elaborate treatises upon the subject—they are to fully teach, this only to remind, the student.

It may be regarded as a full set of notes upon the Practice of Medicine, and as such, it is hoped, will prove far more valuable and satisfactory than the ordinary imperfect and hurriedly taken notes.

Free reference has been made to the works and writings of Professors DaCosta, Bartholow, Flint, Reynolds and Roberts, acknowledgment of which is made here, in place of by foot notes on the different pages.

D. E. H.

Philadelphia, September, 1883.

CONTENTS.

PART I.

COMPEND

OF THE

PRACTICE OF MEDICINE.

PART I.

INTRODUCTION.

The Practice of Medicine embraces all that pertains to the knowledge and cure of the diseases of which the physician is called upon to treat.

Disease may be defined as a deviation or alteration in the functions, properties or structure of some tissue or organ, whereby its office is no longer performed in accordance with the natural standard; *Organic*, when associated with an organic change in the affected part; *Functional*, when the phenomena are independent of any recognizable lesion. The study of disease, whether organic or functional in character, is termed *Pathology*.

Pathology explains the *origin*, *causes*, *clinical history* and *nature* of the morbid conditions to which the economy is liable.

Ætiology, or the causes of disease, are twofold, viz: *Predisposing* and *Exciting*.

Predisposition to disease signifies a special liability or susceptibility to its occurrence, and may be *hereditary* or *acquired*.

Hereditary predisposition to certain diseases is also called *Diathesis*, viz; offspring of phthisical parents are said to be of Phthisical Diathesis, etc.

Diathesis is a morbid constitution, predisposing to the development of a particular disease, and may be inherited or acquired.

Acquired predisposition is such as arises from

I. *Habits*, viz: Strain on the nervous system resulting in nervous diseases.

II. *Age*, viz: Children, very liable to catarrhal disorders.
Young adults, fevers, perverted sexual disorders, etc.
Middle age, heart and digestive disorders, cancer, etc.
Old age, degeneration of vessels, etc.

III. *Occupation*, viz; Miners, weavers and cutlers, lung diseases.

IV. *Sex*, viz: Women, emotional nervous diseases.
Men, as more exposed, rheumatism, pneumonia, etc.

V. *Race*, viz: Negro, phthisis and scrofula; exempt from malaria.

Exciting causes of disease are divided into those acting from *within* and those acting from *without*.

Causes from *within* are the *emotions*, *passions*, etc., viz: fear *may* produce chorea; anger has caused jaundice; worry, heart troubles.

Causes from *without* are *food*, *air* and *light*.

The Clinical History of disease includes all the symptoms and signs which may occur from the *period of incubation* until its final *termination*.

Symptoms are such alterations of the healthy functions that give evidence of the existence of a diseased condition, and may be either *objective* or *subjective*. *Objective*, when evident to the senses of the observer, viz: redness or swelling. *Subjective*, when felt by the patient, viz: pain or numbness.

The Period of Incubation is the interval between the entrance of the poison into the system and its manifestation, seldom presenting recognizable symptoms.

The Prodromes are the earliest recognizable symptoms; viz: rigors, during the invasion of fever, the various aura preceding an epileptic fit, etc.

Acute disease is one in which the invasion is rapid, and, as a rule, severe; when less rapid and intense the disease is said to be *subacute*; when gradual or slow the disease is said to be *chronic*.

Pathognomonic is the term applied to such symptoms as belong to one particular disease, and are therefore characteristic of it, viz: rusty sputum of pneumonia.

Physical signs are, strictly speaking, *objective* symptoms.

The Termination of a diseased action may occur in one of three ways, viz: *Cure*, *Secondary Processes*, or in *Death*.

Cure may occur by

I. *Lysis*, or slow return to health.

II. *Crisis*, abruptly, with a critical discharge.

III. *Metastasis*, or changing from one location to another.

Secondary processes is when the diseased action is substituted by a new morbid process, viz: Rheumatism followed by endocarditis; apoplexy by cerebral softening.

By *Death* is meant a complete cessation of tissue change occurring by

I. *Asthenia*, or an ever increasing debility, viz: phthisis, cancer, etc.

II. *Anæmia*, or insufficient quantity or quality of blood.

III. *Apnæa*, or non-aeration of blood, viz: acute lung diseases, croup, etc.

IV. *Coma*, death beginning at the brain, viz: uræmia, narcotic poisoning, etc.

Morbid or Pathological Anatomy is the knowledge of structure or tissue changes after death.

Diagnosis of disease implies a complete, exact and comprehensive knowledge of the case under consideration, as regards the origin, seat, extent and nature of all the morbid conditions.

A direct diagnosis is made when the morbid condition is revealed by a combination of clinical phenomena, or some one or more pathognomonic symptoms.

A differential diagnosis is the result when the diseases resembling each other are called to mind and eliminated from each other.

A diagnosis by exclusion is by proving the absence of all diseases which might give rise to the symptoms observed, except one, the presence of which is not actually indicated by any positive symptoms.

Prognosis of disease is the ability or knowledge to foretell the most probable result of the condition present, and involves an amount of tact or knowledge only acquired by prolonged experience.

Treatment. The ultimate and most important object of the study of medicine, in a practical point of view, is to learn how to *cure*, *relieve*, or *prevent* disease, and it must be borne in mind that this *does not consist solely in the administration of medicine*, but requires strict and faithful attention to *diet* and *hygiene*.

When the object is to prevent disease, viz.: smallpox by vaccination, it is called *Prophylactic or Preventive* treatment.

When disease is to be broken up, although already begun, viz.: aborting the chill of malaria, it is called *Abortive* treatment.

When the disease is allowed to run its natural course without attempting its removal, but being constantly on the alert for obstacles to its successful issue, viz.: the generally adopted plan of treating continued fevers, it is called *Expectant* treatment.

When the disease is incurable, and removal of marked suffering is the indication, it is called *Palliative* treatment.

When marked weakness and prostration are to be overcome, it is called *Restorative* treatment.

FEVERS.

Fever is a condition in which there are present the phenomena *of rise of temperature, quickened circulation, marked tissue change* and *disordered secretions*.

The *primary cause* of the fever phenomena is a disorder of the sympathetic nervous system giving rise to disturbances of the vaso-motor filaments.

Rise of temperature is the pre-eminent feature of all fevers, and can only be positively determined by the use of the thermometer. The term *feverishness* is used when the temperature is 99° to 100° Fahr.; *slight fever if* 100° or 101°; *moderate* 102° or 103°; *high* if 104° or 105°; and *intense* if it exceed the latter.

Quickened circulation is the rule in fevers, the frequency usually maintaining a fair ratio with the increase of the temperature. A rise of one degree Fahr. is usually attended with an increase of eight beats of the pulse per minute.

The tissue waste is marked in proportion to the severity and duration of the fever phenomena, being slight or nil in febricula, and excessive in typhoid fever.

The disordered secretions are manifested by the deficiency in the salivary, gastric, intestinal and nephritic secretions, the tongue being furred, and the mouth clammy, anorexia, thirst, constipation, and scanty, high-colored, acid urine.

An **Idiopathic** or **Essential** fever is one in which no local affection gives rise to the fever phenomena; although lesions may arise during its course.

A **Symptomatic** or **Secondary** fever is one dependent on an acute inflammation.

CONTINUED FEVERS.

All continued fevers are characterized by a steady progress of the febrile movement, without either a too decided rise or fall of the temperature to modify the impression of a continuous action.

SIMPLE CONTINUED FEVER.

Synonyms. Irritative; febricula; ephemeral; sun; synocha.

Definition. A continued fever, of short duration, mild in character, not due to specific cause, rarely fatal, but when death does occur, presenting no characteristic lesion.

Causes. Fatigue, mental and physical; exposure to heat; excesses in eating and drinking; excitement and violent emotion; most common in childhood.

Symptoms. An abrupt feeling of *lassitude*, followed by a decided *chill* or *chilliness*, a sudden and rapid *rise of temperature*, quick, *tense pulse*, *headache*, *dry skin*, *intense thirst*, *coated tongue*, and *scanty*, *high-colored urine*. Cases due to errors in diet are accompanied by *nausea* and *vomiting;* those, in childhood, due to excitement, fright or emotions, may have *slight convulsions*. The *temperature* may, within an hour or two, reach *103° F.* or more, when slight *delirium* often occurs.

Duration. From 24 hours to 6 or 7 days. Never exceeds ten days.

Termination. Within a few hours, to a day, the temperature rapidly falls to the norm—(*crisis*); or it may continue for several days gradually falling—(*lysis*). *Herpes* about the lips and nostrils often observed at the close of an attack. *Convalescence* rapid.

Prognosis. Recovery, without sequelæ, the rule.

Diagnosis. Unless the fever can be attributed to some one of the causes that give rise to it, a doubt may exist for the first twenty-four hours, after which time it can hardly be mistaken for any other disease.

Treatment. Very little medicine. A full dose of *hydrargyri chlorid. mite*, or *an enema*, *sponging* the surface with cold water, and the administration of *saline diaphoretics* and *diuretics*. If great arterial excitement, *aconitum* may be added. Light diet is most agreeable. Cases in which the nervous symptoms are prominent do well on Fothergill's "fever mixture of the future," viz:—

℞. Acid. hydrobrom..... f℥ ss–j
Syr. simplicis..... f℥ ss–j
Aquæ..... f℥ ij–iij. M.

Sig.—Every four hours.

Quinina in tonic doses during convalescence.

CATARRHAL FEVER.

Synonyms. Influenza; epidemic catarrhal fever; contagious catarrh.

Definition. A continued fever, occurring generally as an *epidemic;* due to specific cause; characterized by a catarrhal inflammation of the respiratory organs, and sometimes of the digestive; always accompanied by nervous symptoms and marked *debility*.

Causes. A specific *Vegetable germ*, uninfluenced by soil, climate or atmospheric changes.

Symptoms. The onset is sudden, *chill*, followed by *fever*, temperature reaching 101° to 103°, *quick, compressible pulse* and severe, *shooting pains* in the eyes, frontal sinuses, joints and muscles. The chill and fever are rapidly followed by *chilliness along the spine, pain* in the *throat, coryza, sneezing, injected, watery eye*, and a dry, irritative *cough, laryngeal* and sometimes *bronchial*. Also *disgust for food, pasty tongue* and *diarrhœa*. In some epidemics the digestive symptoms are the most prominent, when *dysentery* may occur.

The above symptoms are always associated with decided *weakness* and *debility*. Delirium is rare, but marked *hebetude* and *cutaneous hyperæsthesia* are common.

Duration. Four to seven days. Relapses frequently occur.

Complications. Lobar or Catarrhal Pneumonia frequently occur, which adds to the gravity of the attack. The *cough* may outlast the disease one or more weeks.

Prognosis. Recovery is the rule when it attacks the healthy and vigorous. *Grave*, when the very young, very old, or those suffering from organic diseases, such as Bright's disease, fatty heart, etc., are attacked.

Diagnosis. Isolated cases may be mistaken for a "bad cold." But when epidemic, the *sudden onset, marked general catarrh* and *decided prostration* should prevent error.

Treatment. No specific. *Support* the system and treat indications. The *catarrh, pains* and *cough* are at least ameliorated by the following:—

℞. Quininæ sulph..... grs. ij–iv
Morphinæ sulph..... gr. $\frac{1}{4}$
Aquæ lauro-cerasi..... ℥j. M.
Sig.—Every four hours,

and the frequent inhalation of *tinct. benzoin. comp.*, ℥ ss–j., *aquæ bul.* Oj

If the *bronchial* symptoms become troublesome use

℞. Ammonii muriat..... grs. x
Mist. glycyrrh. comp..... ℥ij. M.
p. r. n.

Should *Pneumonia* occur treat as ordinary case, but *never* depress.

TYPHOID FEVER.

Synonyms. Enteric; gastric; nervous fever; entero-mesenteric; abdominal typhus.

Definition. An acute, self-limited, *febrile* affection, due to a special poison; characterized by insidious prodromes; epistaxis; dull headache followed by stupor and delirium; red tongue, becoming dry and brown, and cracked; tympany, abdominal tenderness, and early diarrhœa; a peculiar eruption upon the abdomen; rapid prostration and slow convalescence; a *constant lesion* of Peyer's patches, mesenteric glands and spleen.

Causes. Predisposing and Exciting. *Predisposing* are *Age*, viz.: young adults, and *Season*, viz.: hot and dry autumn. The *Exciting* cause is a *special typhoid germ*. It does not originate *de novo*, but results from the *decomposition* of *typhoid excreta*. Klebs claims to have identified a specific "typhoid bacillus."

Pathological Anatomy. The characteristic lesions of typhoid fever consist in certain changes in the *Peyerian patches* and *solitary glands*, which may be divided into well defined stages, to wit: I. *Infiltration*. II. *Sloughing and Ulceration*. III. *Cicatrization*, or in rare cases, *Perforation*.

The *Mesenteric glands* become enlarged and soften, but seldom ulcerate.

The *Spleen* also enlarges and softens. There are besides, *parenchymatous degeneration* of all the tissues of the body.

Symptoms. *Stage of Prodromes*—The onset insidious with *malaise*, vertigo, headache, disordered digestion, disturbed sleep, epistaxis, depression, and muscular weakness, followed by a *chill* or *chilliness*.

First Week dates from onset of fever, when are present *hot skin, frequent pulse, coated tongue, nausea, diarrhœa, headache*, and upon the *seventh day a few reddish spots resembling* flea bites appear upon the abdomen.

Second Week, foregoing symptoms exaggerated; *fever* continuous, frequent and *compressible pulse*, tympanitic, *tender abdomen, gurgling in iliac fossæ, nocturnal delirium*, severe and constant *headache* and *stupor*, a

short *cough*, with distinct *sibilus* on auscultation, irregular muscular contractions (*subsultus tendinum*), sordes upon the teeth and lips, the *diarrhœa* continuing.

Third Week. *Fever* changes from continuous to remittent; the evening exacerbations continue as high as the preceding week, and all the symptoms remain about the same until near end of week, when they ameliorate.

Fourth Week. The fever decidedly remits; almost normal in morning, the pulse becomes less frequent and more full, the tongue gradually clears, the abdomen lessens in size, the diarrhœa ceases, the patient passing into a slow convalescence, greatly emaciated, which may last for some weeks.

Analysis of Symptoms. *The temperature record of typhoid fever is a characteristic one.* The fever on the morning of the first day may be stated at 98.5° F., evening 100.5°; second morning 99.5°, evening 101.5°; third morning, 100.5°, evening 102.5°; fourth morning, 101.5°, evening 103.5°; fifth evening 104.5°. From that time until end of the second week, evening temperature ranges between 103° and 105°, the morning's being a degree lower.

Diarrhœa is the principal intestinal symptom; if absent, the lesion is slight. The stools are at first dark, but early in the second week they become fluid, offensive, *ochre-yellow*, resembling "pea-soup," and may be streaked with *blood*. They number from *three* to *fifteen* in the twenty-four hours.

Eruption is almost constant. Consists of from *five* to *twenty* small *rose-colored spots*, on *abdomen*, *chest* or back, sometimes on limbs, appearing in crops, lasting about *five days*, *disappearing on pressure* and at *death*. *Return with relapses.* *Eruption* day from *seventh* to *ninth*.

Nervous symptoms are, pronounced *headache*, early and severe. *Dullness* soon following, passing into *drowsiness* and *stupor*. *Deafness* pronounced. *Sight* impaired, grave cases double vision. *Delirium* low and muttering, generally pleasant in character, a late symptom.

Convalescence protracted. Great debility and anæmia, causing pronounced *sweating*.

Complications. *Intestinal hemorrhage* may occur from fourteenth to twentieth day; decline of temperature to norm or below precedes passage of blood. The hemorrhage is due to the erosion of a vessel during the ulcerative action.

Perforation makes case hopeless. *Peritonitis* without perforation adds to gravity, but not necessarily fatal. *Lobar pneumonia*, *hypostatic congestion* and *bronchitis* are frequent occurrences. *Albuminuria* may occur.

Relapses common. The symptoms all return *suddenly;* duration half the time of original attack; occur end of fourth or beginning of fifth week. Not so fatal as might be expected.

Prognosis. A positive one cannot be made. Favorable indications are constipation, slight diarrhœa, low temperature and moderate delirium.

Diagnosis. The *typhoid condition* differs from typhoid fever, in absence of *diarrhœa, eruption,* and *the characteristic temperature* record.

Enteritis has intestinal disorders alone.

Peritonitis, abdominal symptoms only, with constipation.

Acute miliary tuberculosis often mistaken for typhoid fever.

Meningitis lacks the intestinal symptoms and fever record.

Treatment. *No specific.* Intelligent nursing; pure air; quiet; disinfecting urine and stools; liquid diet at intervals of every *two* or *three hours.* The following remedies have advocates, claiming that they modify the course of disease; viz: *Mercurials, iodum, acidum carbolicum, mineral acids, argent. nitras,* and *ergota.*

The present popular so-called "specific treatment" of this disease consists in the administration every second evening, until four doses are taken, of *hydrargyri chlor. mite,* gr. vij–x, which seemingly lessens the frequency of the stools in the later stages of the attack, although slightly increasing them at the time. Also administering from the beginning of the attack—

℞. Tinct. iodi..... ℥ij
Acid carbol. liq..... ℥j. M.

Sig.—One, two or three drops in ice water, every two or three hours, after food.

To reduce temperature, cold bath, cold pack, and cold sponging, or *quinina,* gr. x–xx, repeated within an hour.

Diarrhœa should not be checked unless it exceeds *three stools* in twenty-four hours, when may be used—

℞. Bismuth subnit..... gr. xx
Acid carbol..... gtt. j
Tinct. opii deodorat..... gtt. x–xv
Mucil. acaciæ..... ℥j
Aquæ..... ℥iij. M.

Sig.—Every three or four hours;

Or

℞. Cupri sulph..... gr. ⅛
Opii ext..... gr. ¼. M.

Sig.—In pill, every four hours.

Tympanites; cold compresses or turpentine stupes to the abdomen; or

ol. terebinthinæ, gtt. x, *morphinæ sulph.*, gr. $\frac{1}{20}$, every third hour, or *tinct. nucis vomicis*, gtt. x, *p. r. n.*

Headache; cold to head, mustard to neck, and foot baths; if these fail, *morphina* or *atropina* hypodermatically.

Delirium; if from debility, increase stimulants; other causes, *morphina*.

Restlessness and *coma vigil; chloral* alone or with *potassii bromidum* or *morphina*.

Debility; nourish every *three* hours; don't permit sleep to interfere with nourishment. *Stimulants* are indicated early; best guide is the heart's action; an average amount would be ℥ vj *spts. vini gallici*, per diem.

Bladder should be attended to daily.

Intestinal hemorrhage; at once *morphina*, gr. ¼, hypodermatically, and *ext. ergotæ fld.*, gtt. xx–xl, repeated; or *Monsell's solution*, gtt. ij–iv, every two hours.

Perforation and *peritonitis;* at once gr. ¼ *morphina* hypodermatically, and gr. j *opii extract.*, every hour, and bold stimulation.

TYPHUS FEVER.

Synonyms. Contagious fever; ship fever; jail fever.

Definition. An acute febrile, *epidemic* disease; *contagious* and characterized by sudden invasion, profound depression of the vital powers, and a peculiar petechial eruption; favorable cases terminating by *crisis* in fourteen days. No lesion.

Cause. A special infecting germ, the character of which is unknown, but which is influenced by filth, overcrowding, etc.

Pathology. Blood dark and thin; lessened fibrin; tissues soft and flabby.

Symptoms. Begins abruptly; *chill* followed by violent *fever;* temperature within few days reaches 104° to 105°; frequent, bounding *pulse*, soon becoming compressible; severe *headache* followed by violent *delirium;* from *fifth* to *seventh* day, coarse, red, measly *eruption*, with a mottling of the skin all over the body, except face, not disappearing on pressure; *constipation* the rule. End of second week, temperature suddenly declines and passes into *rapid convalescence*.

Complications. Pneumonia and swollen parotid glands are common.

Prognosis. *Unfavorable indications;* high temperature, frequent pulse, early stupor, presentiment of death. *Favorable;* youth, moderate temperature and pulse, and mild nervous phenomena.

Diagnosis. *From typhoid fever*, age, season, onset of disease, character of eruption, and intestinal symptoms.

Measles begin milder, with coryza and cough, and seldom such pronounced nervous phenomena, but an early eruption appearing on face.

Treatment. Much the same as typhoid. As *typhus* is distinctly contagious, *isolation* is imperative, with immediate removal and *disinfection* of the patient's excreta.

For high temperature, cold pack, cold bath, cold sponging, or full doses of *quinina*.

For headache, delirium, etc., cold to head; in young and strong, a few leeches to the temple, and *chloral*, with or without *bromides*.

For constipation, mild laxatives.

Debility; alcohol early and in full doses; *chloroformi spts.*, in drachm doses, where danger of collapse.

CEREBRO-SPINAL FEVER.

Synonyms. Epidemic cerebro-spinal meningitis; epidemic cerebro-spinal fever; spotted fever; cerebro-spinal typhus.

Definition. A malignant *epidemic* fever, characterized by painful contractions of the muscles of the neck, retraction of the head, hyperæsthesia, disorders of the special senses, and frequently an eruption of petechia or purpuric spots. Lesions of cerebral and spinal membranes are found at *post-mortem*.

Cause. Special poison, nature unknown; attacks young by preference; most common in winter; not contagious.

Pathological Anatomy. *Hyperæmia*, followed by an *exudation* of *lymph* and an *effusion* of *serum* upon the *membranes* of the brain and spinal cord, causing pressure.

Symptoms. Divided, according to the severity of the lesion, into three groups; to wit, the *common* form, the *fulminant* and the *abortive*.

The Common Form begins with a *chill*, excruciating *headache*, persistent *nausea, vomiting, vertigo* and an overwhelming sense of *weakness*. Within a few hours the muscles of the neck become *rigid* and *retracted*, with decided *pain* upon moving the head; this rigidity and retraction soon extends to the back, when *opisthotonus* obtains. The surface of the body becomes highly sensitive (*hyperæsthesia*) and *convulsions* or *delirium* occur. Intolerance of light, and in some cases *amaurosis*, more or less *deafness*, loss of *smell* and *taste* soon follow. The *temperature* and *pulse*

record are irregular. From the *first* day to the *fifth* an *eruption* of petechiæ or purpura occurs in a majority of cases. The disease reaches its height in from three to eight days, and passes into *stupor* and *coma* or ameliorates and passes into a protracted convalescence.

The Fulminant Form. Severe *chill*, *depression*, and in a few hours *collapse*. Patient is overcome by the poison and never reacts.

The Abortive Form consists of one or more pronounced characteristic symptoms during the course of an epidemic.

Sequelæ. Result from thickening of either the cerebral or spinal membranes; Persistent *headache*, *blindness* or *deafness*, partial or complete; *epilepsy* or different forms of *spinal palsies*.

Prognosis. Varies according to epidemic; from twenty to fifty, and even seventy-five per cent. die.

Diagnosis. *Typhoid Fever* begins slowly, *without* intense headache, muscular rigidity, vomiting, active delirium, ending in coma and constipation, and has a typical temperature record.

Typhus fever has higher fever, is of longer duration, and has peculiar measly eruption, *not* attended with muscular rigidity and retraction, hyperæsthesia, nor disorders of the special senses.

Tubercular meningitis is *not* epidemic, and has no characteristic eruption, and is preceded by long prodromes, and runs a tedious course.

A congestive chill resembles the *fulminant* cases in suddenness of depression, but the latter has not the history of the former.

Inflammation of the meninges of the cord are due to exposure to cold, or syphilis, and is not attended with cerebral symptoms or an eruption.

Treatment. Full doses of *opium*. Hypodermatic use of *morphina*, gr. ¼ to ½ every two or three hours; or *opii extract.*, gr. j every hour until stage of effusion, when *quinina* in tonic doses, and *potassii iodidum* are indicated. Prof. DaCosta alternates *potassii bromidum* with *opium*, especially in children. *Locally*, cold to head and spine. A generous diet from onset. For *sequelæ*, *potassii iodidum*, course of *hydrargyrum*, and flying blisters along the spine.

RELAPSING FEVER.

Synonyms. Famine fever; bilious typhoid.

Definition. An acute, *contagious*, febrile disease, self-limited; characterized by a febrile paroxysm, succeeded by an entire intermission, which is in turn followed by a *relapse* similar to the first seizure. No specific lesion.

Cause. A specific poison; *contagious;* acquiring the greater activity the more filthy, crowded and unhealthy the population amid which it prevails.

Pathological Anatomy. During febrile paroxysm *only*, blood contains minute *spiral* filaments—*spirilli*, constantly twisting and rotating. Liver and spleen greatly swollen.

Symptoms. No *prodromes.* Onset abrupt, with fever, 102°–104°; frequent, rather *weak pulse*, *headache*, nausea, *vomiting*, and lancinating *pains* in limbs and muscles, marked in the calf of leg; *second day*, feeling of *fullness* and *pressure* in right and left hypochondrium, due to swollen liver and spleen; *jaundice* is frequent; *seventh day* ends by *crisis; fourteenth day* symptoms return in milder form, continuing about four days, when enters slow convalescence, much emaciated. Several *relapses* may occur.

Prognosis. Recovery the rule, but protracted, as decided *emaciation* results.

Diagnosis. *Yellow fever* has many points of resemblance, but has shorter febrile stage, remission not so complete, vomiting late and characteristic, normal spleen, and late appearance of yellow color.

Remittent fever begins with decided chill, followed by fever and sweats, and not the progressive rise of temperature till fifth or seventh day.

Treatment. *Expectant.* Act on secretions; nourish patient and meet urgent symptoms. For fever, *sodii salicylat.;* for pain, hypodermatic of *morphina;* nausea and vomiting, *acidum carbolicum* or *cerii oxalas;* during remission, *ferrum* and *quinina.*

PERIODICAL FEVERS.

These affections are characterized by the distinct periodicity of the phenomena, having intervals during which the patient is wholly or nearly *free from fever.*

INTERMITTENT FEVER.

Synonyms. Ague; chills and fever; malarial fever.

Definition. A *paroxysmal* fever, the phenomena observing a regular succession; characterized by a cold, a hot and a sweating stage, followed by an interval of complete *intermission* or apyrexia, varying in length, according to the variety of the attack.

Cause. Malaria.

Pathological Anatomy. Blood dark, from formation of pigment (*Melanæmia*). Spleen swollen (*Ague cake*). Liver engorged and swollen.

Varieties. *Quotidian* when a daily paroxysm; *tertian* when every other day; *quartan* when it occurs first and fourth days; *octan* when weekly; *duplicated quotidian* when *two* paroxysms daily; *duplicated tertian*, two every second day; *double tertian*, daily paroxysm, but more severe every second day. *Dumb ague*, or masked ague, is irregularity of the characteristic phenomena.

Symptoms. Each paroxysm has three stages, to wit: *cold*, *hot* and *sweating*.

Cold stage begins with *prodromes*, to wit: lassitude, yawning, etc., followed by *chill;* teeth chatter, skin pale, nails and lips blue, nausea and great thirst, while thermometer shows a decided *rise of temperature*, 102°, F.,–104°; these phenomena continue from one-half to an hour.

Hot stage begins gradually, by shivering ceasing, surface becoming *hot* and flushed, temperature rising to 106°, F., or more, *pulse full*, *headache*, *nausea*, *excessive thirst*, *scanty urine*, and other phenomena of *pyrexia*, continuing from one to eight or ten hours.

Sweating stage begins gradually on *forehead*, spreading over entire surface; *fever lessens*, temperature rapidly falls to 99° or 98°, pulse less full, headache lessens, and feeling of comfort, sleep often following; duration from one to four hours, when the *intermission* occurs, the patient apparently well, excepting a feeling of general debility. The occurrence of the next paroxysm depending upon the variety of the attack.

The paroxysm may be ushered in by a decided pain in one or more nerves, instead of the cold stage, to wit: "*brow ague.*"

Prognosis. Recovery the rule. Without treatment many cases end favorably after several paroxysms; others passing into the *chronic* form or *malarial cachexiæ*.

Diagnosis. No difficulty when characteristic *chill*, *fever*, and *sweats*.

Hectic fever. Known by its irregularity, and occurring secondary to organic disease.

Pyæmia, produced by other causes than malaria.

Nervous chills show *absence* of temperature rise.

Treatment. *Cold stage* can be averted and the other stages greatly modified by a hypodermatic injection of either *morphinæ sulph.*, gr. ⅛–¼, or *pilocarpin muriat.*, gr. ⅛, or a drachm of *chloroform* by stomach. *Hot stage*, cool drinks and cold sponging. *Sweating stage*, when excessive, sponging with *alumen* and hot water.

Intermission; at once, brisk purgative, followed by *cinchona* in some form, the most efficient being *quininæ sulph.*, gr. xx–xxiv, in solution or freshly-made pills, in one or two doses, *three* to *five hours before* the expected paroxysm.

After *paroxysms* are broken up use *liq. potassii arsenit.* gtt., v–x, *t. d.* for a long time; or *tinct. ferri. chloridi*, gtt. xx, every four hours.

Relapses being common, *quinina* should be given on *second* or *third* day, *fourth* to *sixth*, *twelfth* to *fourteenth*, and *nineteenth* to *twenty-first* days.

REMITTENT FEVER.

Synonyms. Bilious fever; bilious remittent fever; marsh fever; typho-malarial fever.

Definition. A *paroxysmal* fever, with exacerbations and *remissions;* characterized by a moderate cold stage (which does not recur with each paroxysm); an intense hot stage, with violent headache and gastric irritability; and an almost imperceptible sweating stage, which is frequently wanting.

Cause. Malaria, aided by high temperature.

Pathological Anatomy. Blood dark (*Melanæmia*); spleen enlarged, soft, filled with blood, and of an *olive* color; liver congested and swollen, brain hyperæmic and olive-colored; gastro-intestinal canal markedly hyperæmic.

Symptoms. *Cold stage;* moderate *chill*, temperature rises 1° to 2°, *oppression at epigastrium*, slight *headache.*

Hot stage; persistent *vomiting*, furred tongue, *full pulse*, rising to 100 or 120, flushed face, *injected eye*, violent *headache*, *pains* in limbs and loins, hurried *respiration*, the *temperature* rising 104° F., to 106°. The bowels costive, *stools tarry* and offensive, and the *surface* becoming *yellow. Delirium* occurs when the temperature is very high.

Sweating stage; after six to twenty-four hours the symptoms abate and *slight sweating* occurs; the *pulse*, *headache*, *vomiting*, etc., subside, and the *temperature* falls to 99°, F., or 100°.

This is the *remission.*

After some *two* to *eight* or *twelve* hours the symptoms return, generally *minus* the *chill*, and this is termed the *exacerbation*, which is in turn followed by the *remission.*

Duration. From seven to fourteen days, the average. Frequently the fever *ceases to remit*, and instead, becomes *continuous*, the symptoms re-

sembling, if they are not identical with, the *typhoid state*, whence the term *typho-malarial fever, or malario-typhoid fever.*

Sequelæ. *Malarial cachexia* follows when the poison has not been eliminated.

Persistent headache and vertigo are the results of the intense meningeal hyperæmia that sometimes obtains.

Prognosis. Uncomplicated cases are favorable.

Diagnosis. In *intermittent fever* each paroxysm begins with a chill, while the chill seldom recurs in remittent fever; a distinct *intermission* follows each paroxysm of the intermittent form, while a *remission* occurs in remittent, the thermometer showing that the fever does not wholly leave; during the *intermission* the patient is apparently well; such is not the case in remittent fever.

Acute congestion of the liver resembles remittent fever, on account of the *yellow skin*. The exacerbations and remissions distinguish between the two.

Typhoid fever is mistaken for remittent fever, but the absence of diarrhœa, eruption, tympanitis, deafness and severe prostration should prevent the error.

Treatment. *Quininæ sulph.*, gr. xvj–xx per diem, is the remedy. Best given during the *remission*, if possible. If irritable stomach prevents its administration by mouth, use by *hypodermatic injection* or *suppository*. During *hot stage*, cool sponging, cold to head, and if tendency to cerebral congestion, dry or wet cups to the nape of the neck and

℞. Tinct. aconit. rad..... gtt. j-ij
Liq. potas. citrat..... ʒ ij
Liq. ammon. acetat..... ʒ ij. M.

Every two hours.

Purgation during remission, with

℞. Hydrarg. chlor. mite..... gr. v
Sodii bicarb..... gr. x
Pulv. aromat..... gr. v. M.

In pulv., p. r. n.

The same precautions are essential after the paroxysms are broken up, to prevent their return on the septenary periods, that were mentioned for intermittent fever.

PERNICIOUS FEVER.

Synonyms. Congestive fever; malignant intermittent; malignant remittent.

Definition. A malignant, destructive, malarial fever, which may be of the intermittent or remittent form; characterized by *intense congestion* of one or more internal organs, *together* with dangerous perversion of the functions of innervation.

Cause. A high degree of malarial poison.

Varieties. *Gastro-enteric; thoracic; cerebral;* and *hemorrhagic.*

Symptoms. Any of these varieties may begin either as an *intermittent* or *remittent* form; again, the *first paroxysm* is rarely pernicious, but appears as the ordinary malarial attack.

The *gastro-enteric* variety has as distinctive features, *intense nausea* and *vomiting, purging* of thin discharges, mixed with blood, *tenesmus, burning heat* in *stomach*, intense *thirst*, frequent, weak *pulse*, face, hands and feet *cold*, with *shrunken features*, and intense depression of all the vital forces. This condition continues from half an hour to several hours, when either an inter- or remission occurs.

Thoracic variety often combined with the one just described. Its characteristic features are due to overwhelming congestion of the lungs, such as *violent dyspnœa, gasping* for air, 50 to 60 respirations per minute, *oppressed cough* with slight amount of blood-streaked sputa, *frequent, weak pulse, cold surface*, and terror-stricken features; duration same as above.

Cerebral variety, due to intense congestion of the brain; sometimes effusion of serum into the ventricles, or even rupture of small blood vessels. Characterized by *violent delirium*, followed by *stupor* and *coma, slow, full pulse*, the surface either *flushed* or *livid.* Cases may either resemble *apoplexy* or *acute meningitis.* Duration same as other forms.

Hemorrhagic variety or the yellow disease, as it has been termed, begins as an ordinary inter- or remittent fever, soon followed by signs of *internal congestion*, to wit: *nausea, vomiting, dyspnœa*, severe *pains* over *liver* and *kidney*, continuing for a few hours, when the *surface* suddenly turns *yellow* and *bloody urine* is voided, after which an inter- or remission and marked abatement occurs, to be sooner or later followed by a second paroxysm, which is more severe, with additional signs of *cerebral congestion.* Blood may also escape from other parts than the kidneys.

Duration. Pernicious fever, in any of its forms, may last from a few hours to a few days. Recovery is rare after a *third* paroxysm.

Prognosis. With early treatment, one in eight perish.

Diagnosis. *Yellow fever* is most apt to be confounded with the *hemorrhagic* variety, and as they both occur in the same localities, the diagnosis is difficult; the early *yellowness* of surface, with *hæmaturia*, and the absence of the *black vomit*, are the chief points of distinction.

Treatment. The first indication in all varieties is to bring about *reaction*. If *cold stage*, heat to surface, with stimulating lotions; *hot stage*, cold to surface and hypodermatic injection of *morphina*, gr. ¼, at once. After *reaction*, *quininæ sulph.*, not less than gr. xl, repeated p. r. n.; administer by stomach, rectum, or better still, by hypodermatic injection. Dr. Bartholow pronounces the following one of the best formulæ for the hypodermatic use of quinia:—

℞. Quininæ di-sulph..... gr. 50
Acid sulph. dil..... ♏ 100
Aquæ font..... ℥ j
Acid carbol. liq..... ♏ v. M.

Gastro-enteric variety, Prof. DaCosta suggests—

℞. Morph. sulph..... gr. ⅕
Pulv. camph..... gr. j
Mass. hydrarg..... gr. ij
Pulv. capsici..... gr. ss. M.

In pills every half hour until stools change.

For *thoracic* variety, dry or wet cups and *ammon. carbonatis.*

Cerebral variety, venesection, or cups or leeches to neck, cold to head, active purgation, and act on kidneys and skin.

Hemorrhagic variety, purgatives, *morphina* hypodermatically, and either *acid sulph. dil.*, *acid gallic*, or *Monsell's solution*, for hemorrhages. After paroxysms are broken up, long course of *ferrum*, with *quinina* on septenary days.

YELLOW FEVER.

Synonyms. Bilious malignant fever; typhus icterode; Mediterranean fever; sailors' fever.

Definition. An acute, infectious, paroxysmal disease, of *three stages*, to wit: the *febrile*, the *remission*, and the *collapse;* characterized by violent fever, yellowness of the surface, and "black or coffee-ground vomit." Tendency fatal; one attack confers immunity from a second.

Cause. A specific poison, existing only with a high temperature, and destroyed by frost. *Not malaria.*

Pathological Anatomy. *Skin*, lemon or greenish yellow color, due to dissolution of red blood corpuscles; *heart* softened by granular degeneration; *stomach*, veins deeply engorged and mucous membrane softened; it contains more or less "coffee-ground" matter, consisting of blood corpuscles deprived of their hæmoglobin, white corpuscles, epithelial cells and *debris*. *Intestines* much same as stomach; *liver* yellow color and a fatty degeneration of the hepatic cells; *kidneys*, granular degeneration of the epithelium of the tubules.

Symptoms. *First stage, the febrile*, beginning either with the prodromata of *malaise*, etc., or suddenly with a *chill*, high *fever*, in a few hours reaching 104° F., high *pulse*, brilliant eye, flushed countenance coated tongue, *irritability* of the *stomach* and severe neuralgic *pains* in the head, limbs and back, and large joints. The patients are restless and anxious. In severe attacks *delirium* is frequent. *Albumen* in the urine and a peculiar and characteristic *odor* is emitted from the patient. Duration of the first stage from thirty-six hours to three or four days.

Second stage, the remission, when the temperature declines and all the distressing symptoms abate or subside and, with some critical evacuation, convalescence obtains, or, more commonly, after from one to four days the

Third stage, the stage of collapse, is ushered in by a return of all the symptoms of the first stage in an exaggerated form, followed by *yellowness* of the skin, passing to a deep mahogany color, *black vomit* and *hemorrhages* from other parts, *feeble pulse, cold surface, irregular respiration* and *death* from *exhaustion*, the mind remaining clear to the end.

The above symptoms represent a *sthenic* case; other varieties are the *algid*, *hemorrhagic* and *typhus*.

Duration. Depends on the variety, from a few hours to a few days. Rarely continues longer than one week.

Prognosis. One in four perish. Short cases unfavorable, as are hemorrhagic.

Diagnosis. *Pernicious fever*, hemorrhagic variety, apt to be mistaken for yellow fever. Yellow fever, a disease of *one* paroxysm, *one* remission, epidemic, albuminuria and black vomit. Pernicious fever more than one paroxysm, not epidemic, rarely black vomit or albumen in urine.

Treatment. *No specific;* a "self-limited" disease. The indications are to treat symptoms and nourish patient. Good nursing, ventilation, *early emesis* and *purgation*, with *diaphoretics* and *diuretics*, are apparently beneficial. Large doses of *quinina*, early in attack, for high temperature; for the irritable stomach, *ice* slowly dissolved in the mouth and *acidum*

carbolicum, gr. ¼, in *aqua menthæ pip.*, every two hours, alternated with *liquor calcis* and milk, each an ounce; and *Monsell's solution* or *plumbi acetas*, for black vomit and hemorrhages; the pains, restlessness or delirium are best controlled by the hypodermatic use of *morphina* and *atropina*. Free stimulation from onset is essential.

ERUPTIVE FEVERS.

As a group, the eruptive or exanthematous fevers have many features in common. All have a period of incubation, are characterized by a fever of more or less intensity preceding the eruption, by an eruption which is peculiar to each, occur most commonly in childhood, rarely attack the same person twice, very prone to occasion serious sequelæ, and are contagious. Their origin is as yet unknown.

SCARLET FEVER.

Synonym. Scarlatina.

Definition. An acute, self limited, *infectious* disease; characterized by high temperature, rapid pulse, a diffused scarlet eruption, terminating with desquamation, inflammation of the throat, and frequently more or less grave nervous phenomena. Serious sequelæ usually follow an attack.

Cause. A specific poison, maintaining its vitality for a long time. Eminently *contagious*, the contagion residing chiefly in the desquamated epidermis. *Incubation* short, one to seven days.

Symptoms. Onset sudden, decided *chill* and *vomiting*, followed by *high fever*, soon reaching 105°; *rapid pulse*, 110 to 140 being common. At the end of twenty-four hours a *bright scarlet rash* appears on the neck and chest, spreading over the entire body within a few hours; the eruption is not raised, there is no intervening healthy skin, and scattered irregularly are points of a darker hue. With the appearance of the eruption *burning heat of surface, burning in the throat* and *difficulty in deglutition* are complained of, the throat on inspection presenting the appearance of a *catarrhal* inflammation. *Tongue* at first furred, later, red, with prominent papillæ—the "strawberry tongue."

On the fourth or fifth day the fever declines by *lysis*, the eruption fading, and on the sixth or eighth day *desquamation* begins, continuing for a week or more, the *convalescence* being slow, the patient *emaciated* and *pale*.

Scarlatina anginosa are cases with great inflammation and swelling of

the *throat* and neighboring *glands*, the swollen glands pressing upon the surrounding parts, causing *difficulty of breathing and of deglutition*.

Scarlatina maligna are cases with decided *nervous* phenomena, to wit: *convulsions*, *delirium* and *muscular twitching*, the *temperature* reaching 107° to 110°, the *eruption* delayed, *purple* and in *patches*.

Sequelæ. Chronic sore throat; conjunctivitis; otorrhœa; chronic diarrhœa; subacute rheumatism; endocarditis; acute Bright's disease; cutaneous dropsy.

Prognosis. Depends upon the character of the attack. Never can be positive of the result. Mortality ranges from ten to twenty-five per cent.

Diagnosis. A typical case should cause no difficulty; the high fever, rapid pulse, sore throat, and early scarlet eruption, followed by desquamation, should leave no doubt.

Measles; the above symptoms are absent, and *catarrhal* symptoms present.

Smallpox; eruption on third day, in spots, changing to pustules with secondary fever.

Dengue or break-bone fever; absence of above typical symptoms, and presence of severe *pains in the bones*.

Diphtheria; gradual invasion and absent eruption.

Meningitis may be suspected from the symptoms of *scarlatina maligna;* the epidemic influence, eruption, and rapid pulse, are points of difference.

Treatment. *No specific.* Treatment must be *symptomatic*.

For *fever* and *rapid pulse*, either *tinct. aconit. rad.* or *digitalis*. If temperature reaches over 106°, cold bath or pack, in addition.

For *itching* of *eruption*, local use of *oils* or *fats*, in some form, produce great relief.

If the surface is pale, the circulation feeble and the eruption tardy in making its appearance, use *tinct. belladonnæ*, gtt. ij–x, according to age.

For *throat*, ice internally, and, if it does not cause chilliness, externally; if so, apply heat externally; also *gargles* in those old enough, and in those too young, swabbing the throat is an efficient substitute. The following formula is satisfactory for either purpose:—

℞. Potass. chlor..... ʒ iij–vj
Tinct. myrrh ..... f ʒ ij
Mel. desp..... ʒ iij
Infus. cinchonæ..... f ʒ iv. M.

From the onset, in all cases, either *ammon. carb.*, or *tinct. ferri chlor.* and *quinina* should be used, proportioning the dose according to the

severity of the attack. For *malignant* cases bold stimulation from the onset.

It is claimed that a characteristic micrococci are found in the blood, and that, consequently, the disease can be favorably influenced by *acidum carbolicum* or *thymol*.

For the various *sequelæ*, the treatment is the same as if they occurred primarily, *plus* tonics.

The disease being *infectious*, every means should be taken to prevent its spread, to wit: isolation, cleanliness, disinfection, fumigation, etc.

Small doses of *quinina*, in those exposed, said to prevent or modify the severity of an attack, but no true prophylactic is known.

MEASLES.

Synonym. Morbilli.

Definition. An acute *epidemic* and *contagious* disease; characterized by catarrhal symptoms, referable to naso-broncho-pulmonary mucous membrane, fever, and a crimson eruption which terminates by desquamation.

Cause. A specific poison, with a special susceptibility for childhood. Contagious by contact, and has been communicated by inoculation. One attack, as a rule, protects from a second. *Incubation*, ten days.

Symptoms. Onset gradual, irregular *chills*, *fever*, the temperature rising to 101° or 102°, *muscular soreness*, *headache*, and intense *nasal*, *pharyngeal* and *laryngeal catarrh;* on the evening of the second day a *decided remission* takes place in the *fever*, the catarrh continuing; on the *fourth day* occurs an eruption of a *crimson* color, on the face, soon spreading over the body, in the form of dots, slightly elevated, which coalesce into irregular circles or *crescents*, and with the appearance of the eruption the *fever returns*, the catarrh is aggravated and extends to the *bronchial* mucous membrane. About the *ninth day* eruption fades, symptoms abate, and slight desquamation occurs. Some cough and catarrh may remain for a long period.

Black measles or camp measles are a variety occurring in camps, jails, etc., in which occur dangerous chest symptoms, and black spots or petechiæ, from deteriorated blood, and severe prostration.

Rather common complications are lobar and catarrhal pneumonia.

Sequelæ. In those of *strumous diathesis*, scrofula or phthisis may develop.

Prognosis. As a rule, perfect recovery. If phthisis develop, prognosis bad. Black measles, the majority perish.

Diagnosis. A typical case begins gradually, chilliness, nasal catarrh, watery eye, and fever, which decline before eruption, rising afterwards; eruption crescentic in shape, crimson color.

Scarlet fever; absence of catarrh, and earlier appearance and different character of the eruption.

Typhus fever; absence of the catarrh, febrile remission and eruption on face, and with decided cerebral phenomena.

Treatment. *No specific.* Mild cases generally require no medicine, simply regulating diet and bowels, and cool sponging.

If *fever high*,—

℞. Liq. potass. citrat..... ℥j
Spts. æther nitrosi..... gtt. v–x
Tinct. aconit. rad..... gtt. ss. M.

Every two hours, soon controls it.

For *itching* of *eruption*, local use of *oils* and *fats*. For *catarrhal symptoms*, inunction of nose, neck and chest with *camphorated oil* and *pulv. ipecac comp.*, at bedtime; if extends to bronchial mucous membrane, *expectorants*.

During convalescence, for the strumous, protect from exposure, and *ol. morrhuæ* with *syr. ferri iodidi*. For *black measles*, bold stimulation, with *ferrum* and *quinina*.

RUBEOLA.

Synonyms Rötheln; German measles; French measles; false measles.

Definition. An acute, self-limited disease; characterized by mild fever, suffused eyes, cough and sore throat, enlargement of the lymphatic glands of the neck, and a rose-colored eruption, in patches of irregular size and shape, appearing on the first day.

Cause. Propagated by infection. That a peculiar germ exists is probable, but thus far it has not been isolated. *Incubation* from one to three weeks.

Symptoms. Onset sudden, with *mild fever*, *suffused eyes*, with little or no coryza, and *sore throat*, and *enlargement* of the *cervical glands*, and not limited to those about the angle of the jaw, as in scarlatina. Any time from the *first* to the *fourth* day appear *rose-colored spots*, size of pin head, slightly elevated, which coalesce, forming irregular shaped and sized

patches, with intervening healthy skin, fading on the upper part of the body while just appearing on the lower. Symptoms all terminate within a week by *lysis*, the patient being none the worse for the attack.

Prognosis. Most favorable.

Diagnosis. From *scarlet fever*, by absence of high fever, rapid pulse, color and character of eruption and sequelæ.

From *measles*, by absence of intense catarrhal symptoms, late appearance of eruption not of crescentic shape.

Treatment. Mild laxatives and restricted diet. If *fever* high, saline mixture. *Itching* of skin, sponging with vinegar and water.

SMALLPOX.

Synonym. Variola.

Definition. An acute, epidemic and contagious disease; characterized by severe lumbar pains and vomiting, and an initial fever, lasting from three to four days, followed by an eruption, at first *papular*, then *vesicular* and afterwards *pustular;* the development of the pustule being accompanied by a *secondary fever*, during which grave complications are prone to occur.

Causes. A specific poison whose nature is unknown, maintaining its contagious vitality for a long period. There is no period, from the initial fever to the final desquamation, when the disease is not contagious, but the stage of suppuration is the most virulent. One attack, as a rule, protects from a second. *Vaccination* has positive protective influence from the disease, as extensive observation has fully proven that in proportion to the efficiency of vaccination is the rarity and mildness of variola. *Incubation*, fourteen to sixteen days.

Pathological Anatomy. A granular and fatty degeneration occurs in the liver, spleen, kidneys and heart. The *pustules* are found in the larynx, trachea, bronchial tubes, and on the pleura; do not occur in the stomach or intestines.

Varieties. Discrete; confluent; malignant; varioloid or modified smallpox.

Symptoms. *Discrete form.* Onset sudden, with *violent chill, vomiting*, and agonizing *pains in the back*, shooting down limbs; *fever*, in short time, rising to 103° to 104° F.; *full, strong* and *rapid pulse*, ranging from 100 to 130; the *face red, eyes injected, intense headache* and *sleeplessness;*

delirium and convulsions occur at times. During the *third day* the characteristic eruption makes its appearance, first on the forehead and lips, consisting of *coarse red spots;* with the appearance of the eruption all the marked symptoms of the fever abate, the patient feeling quite comfortable. On the *fifth* day of the disease the spots become *papules;* on the *sixth day*, transformed to *vesicles*, which are soon *umbilicated;* on the *eighth day* the *vesicles* change to *pustules;* on *ninth day* the pustules are entirely purulent, and each surrounded with a broad red band, the *halo* or *areola*, the face swollen, the features distorted; on *eleventh day*, pus oozes from the pustules, and drying, forms the *scab* or *crust*, which, on the *seventeenth* to *twenty-first day* drops off, leaving a red, glistening depression or *pit*, soon changing into a white cicatrix. With the formation of the pustules, *eighth day*, severe *rigors* and *fever* set in, and a characteristic *odor* is emitted, all the original symptoms returning; this *secondary fever* is the most critical period of the disease, generally attended with *violent delirium*. In favorable cases the secondary fever subsides after three or four days, and *convalescence* is established.

Confluent smallpox differs from the *discrete* in being more severe, the *eruption* appearing during the *second day*, the *pustules* coalescing into large patches, causing great distortion of the features.

Malignant smallpox is characterized by the intensity and irregularity of the symptoms, death resulting before the characteristic eruption, by convulsions or coma. In these cases *hemorrhages* are frequent and petechiæ are observed.

Varioloid, or modified smallpox, is the form modified by previous vaccination or by a former attack of smallpox. Its course is shorter and milder than the other, and is *not attended with secondary fever*.

Complications. During the course of the *secondary fever* there is a great tendency to grave inflammations, to wit: *pleuritis*, *pneumonitis* and *dysentery*. During *convalescence*, *boils* and *abscesses* on the skin are frequent.

Prognosis. Depends upon the *variety* of the attack, the *age* of the patient, and whether *vaccinated* or not. *Discrete* mortality four per cent.; *confluent*, fifty per cent.; *malignant*, all perish; under *five years* and over *forty years*, fifty per cent.

Diagnosis. Cannot be confounded with any other disease if have typical symptoms, to wit: chill, vomiting, pains in back and legs, high fever and pulse, all declining on *third day*, when the eruption appears, first spots, then papules, then vesicles, finally pustules, drying and forming crusts, and the marked secondary fever.

Treatment. *No specific.* The treatment is symptomatic.

For *initial fever* and *full pulse*—

℞. Tinct. aconit. rad..... gtt. j-ij
Spts. æther nitrosi..... ℥ ss
Liq. ammonii acetat..... f℥ ij
Aquæ..... f℥ iss. M.

Every hour or two.

Or

℞. Acid. salicyl..... gr. v
Spts. vini rect..... gtt. xx
Elix. simp..... ℥ ss. M.

Every three hours.

If *headache* and *backache* are intense, hypodermatic of *morphina*, or *ice bag* to head and back.

For *sleeplessness* and *restlessness* or *early delirium* full doses of *potassii bromidum*.

For *secondary fever* the best remedy is *quinina*, gr. v, every three hours, and for *cerebral excitement* of this period, either full doses of *potassii bromidum*, by stomach, or the following by rectum :—

℞. Chloral..... gr. xv-xx
Mucil. acacia..... f℥ ij
Aquæ..... f℥ ij. M.

p. r. n.

The secondary fever being pyæmic in character, the depression should be anticipated by large doses of *tinct. ferri chloridi* and judicious *stimulation*, brandy in tablespoonful doses being the best.

From the onset, milk, eggs, animal broth, oysters and beef juice should be administered every *three hours*. *Ice* is always grateful and should be given freely, and if pustules appear in the mouth, ice should be held in the mouth as long as possible, and washes of *potass. chlor.* or *acid carbol.* employed.

The disease being contagious, *isolation*, *ventilation*, *cleanliness* and *disinfection* are imperative.

To prevent pitting keep patient in *dark room*, well ventilated. *Masks* of some unctuous material, thoroughly applied, to exclude air, have beneficial effect, a good formula being, *Ung. hydrarg., pulv. marantæ, equal parts, or glycerit. amylii*, painted over eruption, changing to *tinct. iodi* as vesicles are about to develop. *Cold water* dressings constantly to face and hands are beneficial, besides allaying heat, pain and swelling. *Warm water* can be used if more grateful.

VACCINATION.

Definition. Inoculation with the matter of *vaccinia* or cow-pox—*bovine virus*. The person *properly* vaccinated is protected from an attack of smallpox, and especially from a severe or fatal attack.

Vaccination should at least be performed *twice* in every individual, to wit: *infancy* and *puberty*; and it is safer to have it again performed if special exposure is liable or occurs.

In practicing vaccination the skin should be rapidly scraped until the true skin is reached and is ready to bleed, the lymph being then brushed over; or make three or four horizontal and transverse cuts, about four lines long, and rub the virus over them; a little blood, but not much bleeding, should be caused.

Symptoms. If the vaccination "takes," on the *third day* a *papule* appears; on *sixth day* a *vesicle* has formed, with a central depression; on *eighth* day a *pustule*, fully formed and distended with lymph, with a reddish areola, which becomes very wide. The areola begins to fade on the *tenth day*, the vesicle begins to dry, and by the *fourteenth day* a *brown, mahogany scab* or *crust* has formed, which is detached about the *twenty-third day*. The *cicatrix* is circular, depressed, radiated and foveated, becoming, after a time, paler than the surrounding integument.

During the course of a vaccination, more or less constitutional disturbance occurs, especially in children.

Eczematous and papular eruptions often develop in strumous children, for which the virus is unjustly held responsible.

VARICELLA.

Synonym. Chicken-pox.

Definition. A mild, slightly contagious, febrile affection; characterized by a moderate fever, and the appearance of a *vesicular* eruption, drying up and falling off in from three to five days.

Cause. A peculiar poison; attacking only children; occurring sporadically and as an epidemic.

Symptoms. Moderate *fever*, thirst, anorexia and constipation, followed by eruption of *vesicles*, which rapidly dry up, and within the week drop off, leaving slight *pit*. *Pustules* never occur. Symptoms so slight that, were it not for the vesicles, would be overlooked. The eruption appears on the *trunk* and *extremities;* very rarely on forehead and in mouth.

Prognosis. Most favorable.

Treatment. Best left alone. If vesicles on face, means may be used to prevent pitting.

ERYSIPELAS.

Synonyms. Erysipelatous dermatitis; the rose; St. Anthony's fire.

Definition. An acute specific affection; characterized by fever of low type, and a peculiar inflammation of the skin, generally of the neck and face. This inflammation exhibits a marked tendency to spread, to induce serous infiltration and suppuration of the areolar tissue, and to affect the lymphatic vessels and glands.

Cause. A poison, the nature of which is not known. *Feebly contagious.* One attack predisposes to another.

Symptoms. Onset sudden; *chill*, followed by *fever*, which soon reaches 104° or 105°, *frequent pulse*, 100 to 130, coated tongue, *nausea* and *vomiting*, severe pains in the limbs, with epistaxis in adults and convulsions in children, and often *diarrhœa*.

Delirium is frequent, and in those of alcoholic habits it resembles delirium tremens. The *eruption* soon follows the fever, beginning in *red spots*, which rapidly coalesce and spread; a sense of *heat*, *tension* and *tingling* is caused by the *great œdema*, which presents a *tense*, *shiny* appearance, the swelling being so great at times as to close the eyes and distort the features. In many cases *small vesicles* rise, which may coalesce, forming *blebs*, of considerable size, containing a clear yellow serum. After five or six days the eruption begins to subside, symptoms abate, the part affected tender, and moderate desquamation.

During the height of the attack *albumen* appears in the urine, so that the possibility of *uræmic* symptoms must be remembered.

When extensive *infiltration into the areolar tissues* occurs, the swelling and tension become great, and it is termed *phlegmonous erysipelas.*

When the *eruption spreads* to different parts of the body, it is termed *erysipelas ambulans.*

Complications. *Thrombosis* of cerebral capillaries or sinuses, or as it is sometimes called, "erysipelas of the brain," is explained by the intimate anatomical connection of the facial vein with the pterygoid plexus and cavernous sinus.

Œdematous laryngitis, from extension to the larynx.

Pneumonia, pleurisy and meningitis are frequent complications.

Prognosis. Favorable. Unfavorable if it attacks drunkards; if becomes gangrenous; if thrombosis of sinuses occur, or if extends to the larynx.

The convalescence, even from the mildest attacks, is slow, the patient continuing weak and anæmic.

Diagnosis. Not difficult. The fever, early spreading eruption, with burning, swelling, tension and tingling and albumen, separate it from the other *eruptive fevers* or *erythema*.

Treatment. Mildest cases only require a *laxative*, nourishing diet, and locally *vaseline* or *bismuth oleat.*, to modify the heat and burning.

According to Reynolds, *aconitum* will cut short an attack. He administers ♏ ½–j, every fifteen minutes for the first two hours; then in hourly doses, until the surface is moist and the temperature lowered. The author corroborates this plan, from a personal experience.

In severe cases, *tinct. ferri chlor.*, gtt. xx–xxx, every third hour, well diluted. Also *quinina* in gr. ij, every third hour. *Ext. belladonnæ*, gr. ¼, added, with benefit. The diet from the onset should be of the most nourishing character, administered at regular intervals.

Cerebral symptoms, *stimulants, opium and chloral.*

Extension to *throat, argenti nitrat.*, brushed over parts.

Locally, soothing applications are indicated, to wit: *Vaseline, ung. zinci oxidi, ol. olivæ cum glycerinæ*, or *bismuth oleat.*

In *phlegmonous* variety, *argenti nitrat.*, ℈ j, *spts. ætheris nitrosi*, ℥ ij, brushed over and beyond the affected part, gives good results.

DENGUE.

Synonyms. Break-bone fever; neuralgic fever; dandy fever.

The word *dengue* is pronounced *dangay*.

Definition. An acute, epidemic, febrile disease, consisting of two paroxysms of fever with an intermission. The first paroxysm is characterized by high fever, distressing pains in the joints and muscles, and a peculiar eruption; the second paroxysm is characterized by a milder fever, an eruption of different character, attended with intense itching, by some recurrence of the joint pains, and by debility.

Cause. Unknown; but it is evident that a peculiar condition of the atmosphere has some influence in its development.

Symptoms. Onset sudden, *fever*, 103° to 105°, intense *headache, burning pains in temples, backache*, severe *aching* and *swelling of the joints* and *stiffness of muscles*, nausea, vomiting, constipation, and appearance of a *rash*, resembling scarlatina, from which the disease has been mistaken for scarlatinal rheumatism. After some hours to two or three days, a distinct *intermission* obtains, of one or two days' duration.

The onset of the second paroxysm is also sudden, but the severity of the symptoms much less, the patient at same time being greatly debilitated; it is at this time the characteristic eruption appears, being either *erythematous* or *rubeolous*, and attended with *intense itching*, remaining about two days, when desquamation occurs and convalescence is established, but is prolonged by the great debility of the patient. Average duration of disease eight days. *Relapses are common.*

Prognosis. Favorable.

Diagnosis. Most apt to be mistaken for *acute articular rheumatism*, especially during *first paroxysm*, but the course of the disease and the epidemic influence prevents error.

The eruption might mislead for *scarlet fever* or *measles*, were it not for the severe joint and muscle pains.

Treatment. *No specific.* Entirely symptomatic.

At onset, free *purgation and diaphoresis.*

For *fever*, *quinina*, gr. v, every five hours.

For *pains*, *opium* or *acidum salicylicum.*

For *itching*, lotion of *acidum carbolicum.*

DISEASES OF THE STOMACH.

ACUTE GASTRIC CATARRH.

Synonyms. Acute mild gastritis; gastric fever; bilious fever; acute indigestion.

Definition. An acute catarrhal inflammation of the mucous membrane of the stomach; characterized by feverishness, loss of appetite, nausea, with occasional vomiting, painful digestion, irregularity of the bowels, and in severe attacks, vertigo (*stomachic vertigo*).

Causes. Errors of diet, insufficient mastication of food, swallowing liquids which are either too hot or too cold, and especially, the abuse of alcoholic drinks. Occasionally the result of sudden changes of temperature.

Pathological Anatomy. The mucous membrane is irregularly congested and engorged, and covered with a grayish, semi-transparent and

tenacious mucus, having an *alkaline* reaction. The *true gastric juice* is secreted in *lessened amount* or is *entirely suspended.*

Symptoms. At first, *loss of appetite;* at times, *disgust for food;* heavily coated tongue, persistent *nausea*, and at times, *vomiting;* first of undigested food, then viscid mucus, acid and bitter, and finally, bilious matter; slight *irritative fever* is present, with considerable *thirst; acid drinks* eagerly sought after; *digestion imperfect*, giving rise to *pain, feeling of weight* and *eructations;* bowels often loose; sometimes, however, constipated. *Vertigo* is a prominent symptom in many cases, causing great anxiety.

The symptoms are aggravated by errors in diet, and if saccharine or fatty articles are taken, *heartburn* occurs.

Prognosis. Favorable. Duration about a week; recovery slow, even under treatment, as far as perfect digestion is concerned.

Diagnosis. Acute gastric catarrh with fever, may be confounded with *remittent* and *typhoid fever* of the first week, but all doubts will disappear as these maladies develop.

The *vertigo* may be mistaken for *cerebral disease*, but the disappearance of this symptom when stomachic treatment is inaugurated dispels all doubt.

Treatment. Give the stomach as complete *rest* as possible. If the stomach is overloaded, and *ipecac emetic* is indicated, or if vomiting has begun, it may be encouraged by swallowing large draughts of warm water, which will act as a sedative if the stomach is empty. *Irritability of the stomach* is readily controlled by—

℞. Hydrarg. chlor. mite..... gr. $\frac{1}{20}$–$\frac{1}{10}$
Sodii bicarb..... gr. ij
Pulv. arom..... gr. v. M.

Every two hours,

which has the additional advantage of relieving the bowels.

Weak *alkaline mineral waters* or *liquor calcis*, should be freely used.

After the acute symptoms have subsided—

℞. Tinct. nucis. vom..... gtt. iv–x
Acid hydrochlor. dil..... gtt. x
Glycerinæ..... ℥ ss
Aquæ lauro cerasi..... f℥ iss. M.

Before meals, will improve the appetite and digestion.

ACUTE GASTRITIS.

Synonym. Toxic gastritis.

Definition. An acute and violent inflammation of the mucous, submucous and muscular coats of the stomach, with loss of tissue; characterized by great pain, constant vomiting of blood-streaked or bloody mucus and symptoms of collapse.

Causes. Ingestion of irritant and corrosive poisons, to wit: mineral acids, arsenic, corrosive sublimate, copper, etc.

Pathological Anatomy. The mucous membrane is vividly red and injected, more marked at some portions than at others; it is soft and friable; erosions are irregularly scattered, and the sub-mucous, muscular, and at times serous coats show decided destructive changes. The gastric tubules are destroyed in large numbers. In many cases the *oral* mucous membrane presents signs of severe inflammation.

Symptoms. Immediately or soon after swallowing there ensues a deadly *nausea*, rapid and *persistent vomiting;* first, the contents of the stomach acted upon by the poison; afterwards, shreds of mucous membrane, blood clots, etc.; great *anxiety* and *depression*, a *weak*, *rapid pulse*, *slow* and *shallow respiration*, *cold skin*, covered with a *cold sweat*, *intense burning heat* at the epigastrium, *thirst* with *burning* in the *fauces* and *gullet*, and *exhaustive purging; the features* are *more* or *less retracted* or *sunken;* these symptoms terminating in collapse and death, or slow convalescence and recovery with a crippled stomach.

A *diagnosis* of the character of the poison swallowed is often afforded by the *stain* of the lips, face and mucous membrane, viz.; *sulphuric acid*, blackish eschar; *nitric acid*, yellowish eschar; *caustic potash*, spreading widely and softening the tissues; *corrosive sublimate*, whitish or glazed.

Prognosis. Very grave. Majority perish. Early treatment when no perforation of the walls of the stomach and recovery is possible, the organ being ever after much weakened.

Treatment. *At once*, hypodermatic injection of *morphina*, repeated at regular intervals.

Vomiting should be encouraged by the free use of *demulcents*.

If the case is seen within a short period of the swallowing of the poison, the proper antidote should be used; but if some hours have elapsed, it is useless. *Ice*, internally and externally, gives great relief. The stomach should be washed out with the stomach pump, thereby removing any

remaining poison, while at the same time it acts as a sedative to the inflamed membrane.

Milk and *lime water* is the only food that should be given by the stomach, *enemata* being used to support the system.

CHRONIC GASTRIC CATARRH.

Synonyms. Chronic gastritis; chronic dyspepsia; drunkards' dyspepsia.

Definition. A chronic catarrhal inflammation of the stomach, with thickening of the coats and atrophy of the gastric glands; characterized by tenderness over the epigastrium, impaired appetite, painful and imperfect digestion, thirst, and great depression of the mental powers.

Causes. Repeated attacks of acute gastric catarrh; habitual use of spirituous liquors; disease of the heart, lungs, pleura or liver producing chronic congestion of the stomachic vessels; cancerous or other degenerative diseases of the stomach.

Pathological Anatomy. The mucous membrane is of a brownish or slate color, elevated into ridges from hypertrophy, the result of constant congestion; the glands first increase in size, then undergo granular change, atrophy of their cells resulting. The mucous membrane is covered with a thick, alkaline tenacious mucus. These changes may affect the entire organ or be limited in extent.

Symptoms. *Loss of appetite*, disagreeable feeling of *fullness* in the stomach, *tenderness* at the epigastrium, but slightly influenced by eating, *prominence* of the epigastrium, from distention by decomposing gases, occasional *nausea* and *vomiting*, the latter more common in drunkards, occurring on arising, termed *morning vomiting* and consisting of glairy mucus raised after great retching; *constant thirst*, water and at times stimulus being craved; often great *burning* at the pit of the stomach, the result of acidity; *bowels constipated*, *urine* high colored. A feeling of *mental depression* and *sleeplessness*, with occasional attacks of *vertigo*, add to the misery of the patient. The imperfect digestion causes more or less *loss of flesh*, the fat disappearing, the muscles relaxed and the skin dry.

Prognosis. Favorable as to life, but not as to complete recovery, the atrophied glands more or less hindering digestion and assimilation.

Treatment. Regular diet. Avoid fatty, saccharine and starchy food. Also all *tonics*, *bitters*, or *acids*, *unless specially indicated*.

Locally, few *leeches*, *dry cups*, a *blister*, or *emplas. belladonnæ*.

Purgatives are doubly indicated; *first*, relieving the constipation; *second*, clearing the stomach of the tenacious mucus, which neutralizes what gastric juice is secreted. Appropriate purgatives are the natural mineral waters, such as Saratoga or Friedrichshall, or—

℞. Magnesii sulph..... ℥ i-ij
Sodii et potass. tart..... ℥ ss-j
Acid. tartaric..... gr. xx. M.

Dissolved in a glass of water and drank, effervescing, an hour before breakfast.

Digestion may be temporarily aided by *pepsin* or *lactopeptin* with the meals.

For the morbid condition itself may be used, *liq. potass. arsenitis*, gtt. i-ij, *before meals*, or *bismuth subnit.*, gr. x-xx, before meals, to which may be added *sodii bicarb.*, gr. v; or *argenti nitrat.*, gr. ¼–⅓, or *argenti oxidi.*, gr. ½–j, in pill, *before meals.*

Pain is so severe in some cases that resort must be had at times to *opium* or *belladonna* in small doses, after meals.

Rest of body is almost as imperative as rest of the stomach.

GASTRIC ULCER.

Synonym. Chronic gastric ulcer.

Definition. A solution of continuity, involving the mucous membrane and one or more layers of which the walls of the stomach are composed; characterized by pain, disorders of digestion and vomiting of blood.

Causes. Anæmia or its sequelæ the chief factor. Most common in young anæmic women. Virchow claims *emboli* or the *thrombi* form in nutrient gastric arteries which have lost their tonicity, an ulcer forming at the point of obstruction.

Pathological Anatomy. In the majority of cases the ulcer is solitary. The posterior wall near the pylorus is the most common site.

In a typical case there is a circular hole, with sharp borders in the serous coat of the stomach; the loss of substance is greater in the mucous membrane than in the muscular coat, and greater in this than in the serous coat, so that the ulcer looks like a shallow funnel, the apex at the outer wall, the base at the inner wall of the stomach; it is first round, growing, becomes elliptical, bulging at portions, becoming irregular; size, from ¼–½ inch in diameter. When the ulcer heals before all the coats are perforated, a distinct cicatrix marks the location. During its progress nutrient vessels are eroded, causing profuse hemorrhage. Chronic gastric catarrh complicates the majority of cases.

Symptoms. More or less prominent symptoms of indigestion. *Pain* constant at the pit of the stomach, increased by taking food, especially of an irritant kind, the pain often felt in the back, of a burning, gnawing character. *Tenderness* at one or more points, extending from the front to the back. *Vomiting* is almost as constant as pain, coming on soon after eating, if ulcer is at the cardiac orifice; an hour or so after, if at or near the pylorus; rejected matter may be undigested or partly digested food, or simply acrid mucus. *Vomiting of blood* in large quantities and arterial in color is almost diagnostic of gastric ulcer; the blood may be dark in color if it has remained in the stomach some time before being rejected.

Severe and frequent attacks of *gastralgia* may add to the suffering of the patient. The general condition of the patient is not significant, some being greatly debilitated, while in others the nutrition is but little deranged.

Duration. The ulcer is slow in forming, and runs a very chronic course, an average duration being, perhaps, a year. Cases are recorded in which the disease has suddenly developed and terminated by *perforation*, *peritonitis* and *death* within two weeks, but they are rare.

Prognosis. Not very unfavorable. Recoveries are frequent. The dangers are *perforation*, *peritonitis*, or *fatal hemorrhage*.

Diagnosis. *Duodenal ulcer* presents symptoms so akin to those of gastric ulcer that a differential diagnosis is impossible.

Chronic gastritis is often confounded with gastric ulcer; the distinctive points are, absence of vomiting of blood, no localized constant pain aggravated by food, and no tenderness in the back; while the symptoms of indigestion are marked and persistent, with, as a rule, a history of spirit drinking, and the age of the patient—middle life; ulcer in the young.

The points of distinction between *gastric cancer* and *gastralgia* will be pointed out when treating of those affections.

Treatment. Give the stomach as complete rest as possible; this is accomplished by *rectal* alimentation, or where it cannot be carried out, exclusive *milk* diet, adding *lime water*, to enable the stomach to better retain the milk; the amount of milk should be one or two ounces every two hours. *Rest in bed* is paramount, and should be insisted upon.

For *pain*, small doses of *morphina* should be used as needed.

For *hemorrhage*, hypodermatic injections of *ergota* are most reliable.

For the *ulcer*, *liq. potassii arsenit.*, gtt. j-ij every five hours, has given excellent results in several cases treated by the author; *bismuth*, gr. xx-xxx, combined with *sodii bicarb.*, gr. iij-v, three times a day, stands second

in importance; *argenti nitrat.*, gr. ¼–⅓, every four hours, or *argenti oxidi*, gr. ss, every four hours, are at times beneficial.

If *perforation* and *peritonitis* result, full doses of *opium* are indicated.

GASTRIC CANCER.

Synonyms. Cancer of the stomach; gastric carcinoma.

Definition. A peculiar malignant growth, occurring for the most part at the pyloric extremity of the stomach, making constant progress, destroying the gastric tissues and infecting the lymphatic glands; characterized by disorders of digestion, pain, vomiting, marked anæmia, and terminating in all cases by the death of the patient.

Cause. Hereditary. Develops after forty years, for the most part.

Pathological Anatomy. Cancer of the stomach is the most common form of cancer. It is, as a rule, a primary cancer. The variety is most commonly the *scirrhus*, next in frequency, *medullary*, the least frequent, *colloid*. As regards the location, eighty per cent. occur at the *pylorus*.

It originates usually in the *tubules*, rapidly infiltrating the remaining tissues, thickening everywhere as it progresses, and either remains a hard nodulated mass or undergoes ulceration. The hard nodulated growth at the pylorus constricts the orifice, resulting in distention of the stomach. The lymphatic glands adjacent to the stomach are infiltrated, secondary cancers resulting. Ulceration into an artery causes hemorrhage into the peritoneum, causing local peritonitis.

Complications. Fatty heart; thrombosis; tuberculosis.

Symptoms.—*Indigestion*, progressive in character, with *marked acidity*, *flatulency* and fetid breath.

The majority of cases have *vomiting* immediately after eating if at the cardiac orifice, and some hours after if at the pylorus; and if much dilatation of stomach, some days after. The rejected matter is food in various stages of digestion, and frequently *black*, *grumous masses* or changed blood. *Pain*, marked and constant, *dull*, *heavy*, increased by pressure, seldom lancinating. Marked *anæmia*, *emaciation*, and towards the end *dropsy*, the surface having an earthy or *fawn color*. A *tumor* is found in three-fourths of the cases, occupying the epigastric region, *not moving with inspiration*.

The duration of the disease is about one year, patient dying from *exhaustion*, *peritonitis* or *hemorrhage*.

Prognosis. Unfavorable. Recovery never occurs.

Diagnosis. *Chronic gastric catarrh* differs from gastric cancer, in the absence of a tumor, bloody vomit, characteristic pain, peculiar color of surface and dropsy and rapid emaciation.

Gastric ulcer differs in the character of the pain, age of the patient, large amount of bloody vomit, and absence of a tumor and progressive emaciation. Still the diagnosis is often difficult.

Abdominal tumors may raise the question of a gastric cancerous tumor; the points of distinction are the characteristic symptoms of gastric cancer, and that abdominal tumors, especially of the liver and spleen, the ones most apt to cause error in diagnosis, are influenced by inspiration, while *tumors of the stomach are not* so influenced.

When a scirrhus of the pylorus lies upon the aorta, a pulsation may be communicated to it, raising the question of *aneurism of the abdominal aorta*, but the expansile pulsation of aneurism (Corrigan's sign) is wanting, as are the other symptoms of the affection, and if the patient is made to rest upon his hands and feet, the stomachic tumor falls away from the aorta and pulsation ceases.

Treatment. We possess no means of arresting the disease. Professor Billroth has *excised* the pylorus, thereby prolonging life seven months.

For *acidity* and *fetor of the breath*, *acid. carbol.*, gr. ¼–⅓, or *charcoal*, modifies.

For *vomiting*, *bismuth* and *opium*, or washing out the stomach with the stomach pump.

For *pain*, *morphina*. Avoid stimulants.

GASTRIC DILATATION.

Synonym. Pyloric obstruction.

Definition. An abnormal expansion of the cavity of the stomach, with the walls either hypertrophied or decreased in thickness; characterized by pronounced indigestion, vomiting of partly digested and partly decomposed food, at intervals of every few days, and moving of flatus in abdomen (borborygmus).

Causes. Most common, stricture of the pylorus, the result of cancer; pressure of tumor against the pylorus, preventing exit of stomach contents. Loss of muscular tone, occurring in anæmia. Prof. Bartholow cites cases resulting from excessive beer-drinkers, who drank thirty to forty glasses of beer habitually, every day.

Pathological Anatomy. When obstruction exists at the pylorus, the whole organ is dilated, with hypertrophy of the muscular layer of the stomach. Dilatation without pyloric obstruction, the muscular layer is thinner than normal, pale in color, and presents signs of fatty degeneration; the mucous membrane also is pale, thin, and without rugæ.

Symptoms. Those of the disease producing the obstruction *plus* those of obstinate chronic gastric catarrh, with *characteristic vomiting;* the cavity having a greatly increased capacity, large accumulations take place, which are rejected every few days, partly digested and partly decomposed. *Regurgitation* of partly digested aliment, acrid, acid and offensive, very common. *Bowels constipated*, stools hard and dry.

Physical signs of gastric dilatation are: *on inspection*, abnormal prominence of the whole epigastric region; *percussion*, if empty, tympanitic note extending to or below umbilicus, having metallic quality; if full, high-pitched and flat; *auscultation*, splashing and rumbling sound, the succussion sound being distinct if body is shaken.

Diagnosis. The cause being ascertained, no difficulty is experienced in making a diagnosis.

Treatment. Regulated diet. Restrict the use of fluids, using a "dry diet" almost exclusively.

Regardless of cause, washing out the stomach with the stomach pump, every day or two, gives relief, and, if no stricture, administering *strychnina* or *nux vomica*, and very favorable results may follow.

GASTRIC HEMORRHAGE.

Synonyms. Hæmatemesis; gastrorrhagia.

Definition. Gastric hemorrhage is not, strictly speaking, a disease, but a *symptom;* still, vomiting of blood occurs under such a variety of conditions, that a separate consideration is desirable.

Causes. Ulcer of the stomach; cancer of the stomach; scurvy; purpura; hemorrhagic malarial fever; congestion of the liver or spleen; vicarious at menstrual period; yellow fever.

Symptoms. Added to the symptoms of the cause of the hemorrhage, are a *feeling of faintness* and *sinking at the pit of the stomach*, followed by the ejection of blood of a *black*, *grumous*, or *coffee-ground* appearance. Rarely, and then generally in gastric ulcer, the ejected blood may have a *bright red* appearance, the gastric juice not having had time to act upon it.

If the amount of blood escaping into the stomach is large, *blood will be voided by stool.*

Prognosis. Depends entirely upon the cause, the most unfavorable being the result of either gastric ulcer or cancer.

Diagnosis. *Hemorrhage from the lungs* may be confounded with gastric hemorrhage. In the former, the blood is red, is coughed up, not vomited, and associated with a history of pulmonary disease. The chief point of distinction between pulmonary hemorrhage and the vomiting of red blood is, that in the former you can discern râles on auscultating the chest; they are absent in the latter.

Treatment. Perfect rest in bed. *Ice,* swallowed and over epigastrium.

Hypodermatic of *morphina* quiets the patient's fear, and at the same time has a constringing effect upon the vessels. *Ergota,* as fluid extract, or *ergotin* hypodermatically after the patient is quieted, or *liquor ferri subsulph.,* gtt. j-v, well diluted, by stomach.

Allow no food by stomach for several days, nourishing the patient by rectal alimentation.

The hemorrhage controlled, the future treatment is guided by the exciting cause.

GASTRALGIA.

Synonyms. Cardialgia; gastrodynia; stomachic colic; spasm of the stomach; neuralgia of the stomach.

Definition. A painful condition of the sensory nerves of the stomach, induced by various sources of irritation; characterized by violent paroxysms of gastric pain and spasm, associated with feeble cardiac action.

Causes. The affection belongs to the group of neuralgias. The most important factor in its causation is general nervous depression; other causes are malaria, rheumatic or gouty diathesis, anæmia, and certain articles of diet.

Symptoms. Like most neuroses, gastralgia is distinguished by its *paroxysmal* character. *Romberg* thus describes an attack:—

"Suddenly, or after a feeling of pressure, there is severe *griping pain* in the stomach, usually extending to the back, with a *feeling of faintness,* shrunken countenance, cold hands and feet, and an *intermittent pulse.* The *pain* becomes so excessive, the patient cries out. The *epigastrium* is either *puffed out,* like a ball, or *retracted,* with tension of the abdominal walls. There is often *pulsation in the epigastrium.* External pressure is

well borne, and not unfrequently the patient presses the pit of the stomach against some firm substance, or compresses it with his hands. *Sympathetic pains* often occur in the thorax, under the sternum, and in the œsophageal branches of the pneumogastric, while they are rare in the exterior of the body.

"The attack lasts from a few minutes to half an hour; then the pain gradually subsides, leaving the patient much exhausted; or else it ceases suddenly, with eructation of gas or watery fluid, or with vomiting, and with a gentle, soft perspiration, or with the passage of reddish urine."

Besides such severe attacks, we often see *painful sensations in the epigastrium*, of various degrees of intensity, with passing faintness or sinking at the pit of the stomach.

Prognosis. As to perfect recovery, unfavorable, but not dangerous to life. A chronic affection, in that attacks are prone to return from time to time. The cause has much to influence a radical cure.

Diagnosis. From *myalgia of the abdominal muscles*, by the pain of gastralgia being more acute and lancinating, and accompanied by nausea and vomiting and absence of tenderness on pressure.

From *intercostal neuralgia*, by the fact that in this affection the pain is in the left hypochondrium, painful spots along the course of the nerve trunk and at the spine, and absence of nausea and vomiting.

From *gastric cancer*, by the age, character of vomited matter, constancy of the pain, the cachexia, emaciation *and the tumor.*

From *gastric ulcer*, by the localized pain and its constancy, with tenderness and vomiting of blood, and constant dyspeptic symptoms, which is not the case in gastralgia.

Treatment. *For the paroxysm*, hypodermatic of *morphina*, gr. $\frac{1}{12}$–$\frac{1}{4}$, or the stomachic administration of the "compound of anodynes," the so-called *chlorodyne*, in doses of ♏x–xxx p. r. n. The relief afforded by opium in some form is apt to lead to the opium habit when the attacks are frequent

In the interval, regulated diet and one or more of the following remedies: *quinina*, *arsenicum*, *bismuth*, *ferrum*, *liq. iodi. comp.*, or small doses of *potassii iodidum.*

ATONIC DYSPEPSIA.

Synonyms. Dyspepsia; indigestion; heartburn; pyrosis.

Definition. A functional derangement of the stomach, with either deficient secretion in *quantity* or *quality* of the gastric juice; characterized by disorders of the functions of digestion and assimilation.

Causes. Imperfect mastication; bolting of food; eating large quantities of food; same diet long continued; depressed nervous system, from worry, tire, etc. It is often inherited.

Symptoms. *Perverted appetite*, capricious or lost; *difficult digestion*, feeling of weight or fullness in epigastrium; *acidity*, from decomposition of albuminoids; *heartburn*, *flatulency*, *regurgitation*, *or vomiting* of portions of partly digested food or acrid fluid—*water brash* or *pyrosis*. *Pain* or *soreness* at pit of stomach during digestion. *Tongue* either clean or broad, flabby and pale, showing marks of the teeth. *Bowels* constipated; *urine* generally scanty and high-colored, with excess of urates or oxalates, or, in persons of nervous type, it is pale, of low sp. gr., and contains phosphates. *Drowsiness* after meals, with *wakefulness* at night, *defective memory*, *headache* and absent mental vigor, with *flashes of heat*, followed by more or less perspiration.

Prognosis. With careful living, dyspepsia, functional in character, is curable. It has been aptly termed "remorse of the stomach."

Treatment. The most important is to regulate the diet. *Forbid saccharine*, *starchy or fatty articles of food.* Eat small amounts at a time. *Rest after eating*, from a half to an hour. Allow but small quantities of liquids with the meals. In the vast majority of cases *forbid the use of stimulants with meals.*

Aid *digestion* with *pepsin*, with or without *acidum hydrochloricum dilutum*.

Stimulate stomachic peristalsis with *nux vomica*, *gentian* or *cinchona*.

For *acidity*, *alkalies* at times of acidity.

For *pyrosis*, *bismuth* and *pulv. aromat.*, in large doses.

For *constipation*, *pil. rhei comp.*, at bedtime.

For *anæmia*, *mas. ferri carb. or ferri lactas.*

For *flatulency*, *tinct. nux vom.*, before meals, *vegetable charcoal* or *acidum carbolicum.*

DISEASES OF THE INTESTINAL CANAL.

INTESTINAL COLIC.

Synonyms. Enteralgia; tormina; gripes.

Definition. A spasmodic contraction of the muscular layer of the intestinal tube; characterized by acute paroxysmal pain near the umbilicus, relieved by pressure, and associated with feeble cardiac action.

Causes. Constipation; presence of indigestible food; collections of flatus; an abnormal amount of bile discharged into the intestines; lead poisoning; syphilis; chronic malaria; hysteria.

Symptoms. *Romberg* thus describes a paroxysm: "There are attacks of *pain*, spreading from the navel over the abdomen, alternating with intervals of ease. The pain is *tearing*, *cutting*, *pressing*, most frequently *twitching*, *pinching*, accompanied by peculiar *bearing down pains*. The patient is restless, and seeks *relief* in changing his position and in *compressing the abdomen;* his surface may be cold and his features pinched. The *pulse is small and hard*. The abdomen is tense, whether puffed up or drawn inward. There are *often nausea* and *vomiting*, and *desire* for *stool*. There is usually constipation, but sometimes the bowels are regular or even too loose. *Duration* from a few minutes to several hours, relaxing at intervals. It ceases suddenly, with a feeling of the greatest relief, although some soreness remains for a few days."

Lead colic is always preceded by symptoms of lead poisoning, to wit: slate-colored skin, dark gums, showing blue line, heavy breath, with sweetish, metallic taste, obstinate constipation, impaired appetite, slow pulse and contracted abdominal walls.

Prognosis. Most favorable. Death is the rarest termination possible.

Diagnosis. *Gastralgia* differs from colic, in the pain being in the epigastric region and associated with disorders of digestion.

In *hepatic colic*, or the passage of gall stones, the pain is in the hepatic region, attended with soreness over the gall bladder, and retching and vomiting, followed by jaundice and the presence of bile in the urine.

In *nephritic colic* the pain follows the course of one or both ureters, shooting to loins and thigh, with retraction of the testicle of affected side, strangury and bloody urine.

In *uterine colic* the pain is in the pelvis, and associated with menstrual disorders, in fact, a dysmenorrhœa.

In *ovarian colic* or neuralgia, pain on pressure over ovaries, with hysterical phenomena.

Inflammatory disorders of the abdomen differ from colic by the presence of fever and tenderness on pressure.

Treatment. Relief of pain is the first indication, and is best accomplished by a hypodermatic of *morphina*, gr. ⅙–¼, which has the additional advantage of relaxing the spasm, thereby favoring the action of *purgatives*, which should soon follow. One of the best in colic, no matter from what cause, is—

℞. Sodii bicarbonatis..... gr. viij
Hydrargyri chloridi mite..... gr. viij
Pulv. zingib..... gr. iij. M.

After the relief of the pain and free action of the bowels, the cause of the attack should be ascertained and corrected, to prevent future suffering.

CONSTIPATION.

Synonyms. Intestinal torpor; costiveness.

Definition. A functional inactivity of the intestinal canal, due to either atony of the muscular coat, causing lessened peristalsis, or to a deficiency of intestinal and biliary secretion; characterized by a change in the character and quantity of the stools.

Causes. Dyspepsia; character of food; habits of patient; diseases of the stomach and liver; malaria; lead poisoning; syphilis.

Symptoms. In the normal condition, the majority of persons have *one stool* each day, although it is not to be considered abnormal if more than that number occur.

The *bowels* are moved every *three* or *four days*, with great *straining* and *distress*, the *face* often *flushed*, the *cerebral vessels full*.

Or in other cases the bowels may be relieved once a day, but the *stool is small and hard*, causing great pain.

Another group of cases have *frequent stools* during the day, *small* and *non-formed*, due to retained hardened fæces acting as an irritant upon the rectum.

The change in the character of the stools is soon followed by symptoms of dyspepsia, and in many cases with great distention of the abdomen.

Prognosis. Death never results from functional constipation.

Treatment. The successful treatment depends upon the *removal of the cause* and the *coöperation of the patient*.

First, the patient must have a *regular hour* each day for *going to stool*, and must *remain a sufficient time* to permit a thorough evacuation of the bowels.

Second, the diet must be carefully regulated and lived up to.

Third, purgative mineral waters or cathartic medicines are to be *used with caution*, their reckless administration often doing more harm than good.

Fourth, either of the following formulæ, aided by the enforcement of the above rules, will give good results:—

℞. Ext. nucis. vom..... gr. ¼
Ext. belladonnæ alco..... gr. ¼
Aloes soc..... gr. ss
Pulv. rhei..... gr. j
Ol. cajuputi..... gtt. j M.
In pill, at bedtime, and after a week, every second or third night.

℞. Resinæ podophyl.,
Ext. physostig.,
Ext. belladonnæ alco.,
Aloine.....āā..... gr. ¼.
In pill, every night, or second or third night.

℞. Tinct. physostig.,
Tinct. nucis vomicæ,
Tinct. belladonnæ.....āā..... gtt. x
Tinct. aloes et myrrh..... gtt. xxx M.
At bedtime.

DIARRHŒA.

Synonyms. Enterorrhœa; alvine flux; purging.

Definition. Frequent loose alvine evacuations, without tenesmus; due to functional or organic derangement of the small intestines, produced by causes acting either locally or constitutionally.

Causes. Those acting locally, such as *indigestion*, *indigestible food*, *impure food and water*, *irritating matters* or *secretions* poured into the bowels, *entozoa*, etc., cause the flux by direct irritation of the mucous surface.

Those due to constitutional derangement may be secondary to such diseases as *tuberculosis*, *pyæmia*, *albuminuria*, *typhoid fever*, or disturbances of the functions of other organs, giving rise to *vicarious fluxes*, *etc.*

Forms. Acute and chronic.

Symptoms. Acute diarrhœa presents itself in several forms, the result of its cause, to wit:—

Feculent diarrhœa. Few hours after meals the patient feels *colicky*

pains ana flatulency, with a *desire for stool.* There is often *nausea*, *foul tongue*, but seldom vomiting. The *pain* is generally relieved by the purging which ensues. The *stools* have a *feculent* character, are of brown fluid, containing fæces, often offensive, the color becoming lighter after four or five evacuations. Constitutional symptoms are wanting.

This form is the result of over eating, eating too rapidly, or indigestion of different forms, or worms in the intestinal canal, and patients generally recover in a day or two.

Lienteric diarrhœa. In this form there is, with the frequency of evacuations, a *want of assimilation* of *food*, which passes through the intestines more or less unaltered. The *stools* are frequent, *mucous* or *serous*, more or less *covered with bile*, mixed with *undigested food.* In this form the patients emaciate rapidly, owing to the deficient assimilation, the digested portions of the food being hurried on by the irritated bowel. It is usually subacute in its course.

Bilious diarrhœa. The *stools* are frequent, *green or yellow*, with *scalding sensations* at the anus and *griping pains* in the abdomen. Excessive biliary secretion is the irritating cause.

Any of the above forms may pass into chronic diarrhœa by exciting permanent diseases of the intestines. Diarrhœa due to constitutional causes will be mentioned when speaking of those conditions.

Chronic diarrhœa results from repeated attacks of the acute form, or the result of some cachexia. The *symptoms*, as far as the *stools* are concerned, are much the same as the acute disease, except they are *paler*, whence it has been termed *white flux;* in addition, *dyspeptic* symptoms, *aphthous* condition of mouth and tongue, *flatulency*, *colic*, *emaciation* and *anæmia.* The appetite at times capricious, again impaired.

Prognosis. Favorable in *feculent* and *bilious* forms; unfavorable in *lienteric* and *chronic* forms when emaciation begins. Diarrhœa occurring as a symptom, the prognosis is controlled by the original disease.

Treatment. *Acute diarrhœa.* If caused by indigestion the *indication* is a *laxative;* for adults, *tinct. rhei* or *ol ricini*, or both; for children between one and two years of age—

℞. Pulv. ipecac..... gr. $\frac{1}{12}$
Pulv. rhei..... gr. $\frac{1}{4}$–$\frac{1}{3}$
Sodii bicarb..... gr. ss–ij M.

Every four hours until the character of the stools change.

After irritant is removed, for adult, *opium* in some form, combined with *kino* or *tannin;* for children—

℞. Bismuth ..... gr. iij–v
Cretæ. præp..... gr. v M.
Every two hours.

In adults, an *opium* suppository often checks a flux that is uninfluenced by opium internally.

For *bilious* form—

℞. Hydrargyri chlor. mite..... gr. ⅛
Sodii biearb..... gr. ij
Pulv. opii..... gr. ¼ M.

In pill, every two or three hours, until eight pills are used, followed by large doses of *bismuth* and *pepsin*.

In all acute forms *restricted* and *regulated diet* are imperative, *milk* being the most suitable.

Chronic diarrhœa. *Bismuth* gr. xxx–xl, in milk, every four hours; *Hope's camphor mixture*, every four hours; *cupri sulph*., gr. $\frac{1}{12}$, *ext. opii*, gr. $\frac{1}{12}$, every four hours; *argenti nitrat*., gr. ½, *ext. opii*, gr. ⅓, every five hours; may all be used with more or less success; when *dry tongue* and *great flatulency*, use—

℞. Ol. terebinthinæ..... ʃ℥j
Ol. amygdal. express..... ʃ℥ss
Tinct. opii..... ʃ℥ij
Mucil acaciæ..... ʃ℥v
Aq. lauro-cerasi..... ʃ℥ss. M.

Sig.—ʃ℥j every three or four hours.

The diet should be nutritious in character, and moderate stimulants are indicated. Activity of the skin and kidneys should be encouraged.

CATARRHAL ENTERITIS.

Synonyms. Ileo-colitis; acute diarrhœa; inflammation of the bowels.

Definition. A catarrhal inflammation of the mucous membrane of the small intestines; characterized by fever, pain, tenderness and looseness of the bowels. When the catarrh is limited to the duodenum, it is termed *duodenitis*, the symptoms being of a different character.

Pathological Anatomy. There first ensues *hyperæmia* of the mucous membrane and intestinal glands, manifested by *redness*, *swelling* and *œdema;* this is followed by *increased secretion* and an *overgrowth* and *desquamation* of the epithelium, together with a copious *generation of young cells*. As a result of the hyperæmia, often occur rupture of the capillaries and extravasation of blood.

The swollen glands show a strong tendency to ulcerate. This catarrhal process may involve the entire tube or be limited to portions.

Causes. Improper and indigestible food; summer temperature and exposure to cold and wet, while perspiring.

Symptoms. Begins with *languor*, followed by *chilliness* and *fever*, the temperature ranging at 102°–103°, this is followed by *pain*, colicky in character, situated about the umbilicus, localized *tenderness* and *loose evacuations*. *Nausea* and *vomiting* often occur. The *stools* contain but *little fecal matter*, are *yellow* or *greenish-yellow* in color, mixed with *undigested food;* if the stools are numerous, they become whitish and watery, the so-called "*rice-water*" discharges. The appetite is impaired, and this, with the want of assimilation and great waste, soon produce extreme *weakness* and *emaciation*, which is always marked in children.

Duration. In mild cases, four or five days; severe cases continue more or less marked, for a week or two.

Prognosis. Favorable, if early and proper treatment are obtained.

Diagnosis. From *colic*, by the absence of tenderness and fever, and the presence of constipation and its paroxysmal character.

From *typhoid fever*, by absence of prodromes, characteristic temperature record and eruption.

For points of distinction from *dysentery* or *peritonitis*, see those affections.

Treatment. *Rest the bowels* by a restricted diet, to wit: milk and lime water, or weak mutton or chicken soups, with well boiled rice added.

Keep the patient quiet in bed, a difficult matter in the case of children.

For *adults*, *opium* is the remedy, in doses to control the symptoms; mild cases do well with—

℞. Ext. opii ..... gr. ¼
Camphoræ ..... gr. iij M.

In pill, every three hours.

Or—

℞. Tinct. opii deodorat ..... gtt. x
Liq. potassii citrat ..... ℥ ij M.

Every four hours.

The strength and the frequency of administration of either of these formulæ must be governed by the severity of the attack.

For *children*—

℞. Tinct. opii deodorat ..... gtt. j
Bismuth, subnit ..... gr. v
Mist. cretæ ..... f℥ j M.

Every four hours, for a child of one year.

If the case shows the least tendency to linger, the *acid* treatment should be substituted for the above, the best of which is "Hope's Camphor Mixture," the formula being—

℞. Acidi nitrosi..... f℥j
Tinct. opii..... gtt. xl
Aquæ camphoræ..... f℥viij. M.

The dose ranging from f℥j to f℥ij, according to age.

Acidum sulphuricum dilutum may be substituted for the acidum nitrosum in the above formula.

Locally, poultices, warm fomentations, or *ung. belladonnæ* or *oleum camphorat.*, give great relief.

CROUPOUS ENTERITIS.

Synonym. Membranous enteritis.

Definition. A croupous inflammation of the mucous membrane of the small intestines; characterized by tenderness, paroxysmal pain, moderate fever, and the formation and discharge of membranous shreds or casts.

Causes. A disease of adult life. The female sex more liable than the male, and neuralgic, nervous, hysterical or hypochondriacal subjects are more subject to it than are other types.

A peculiar state of the nervous system seems necessary to its production.

Pathological Anatomy. A subacute inflammation of the small intestines, during which the mucous membrane becomes covered with a whitish or grayish-white, firmly adherent, membranous deposit, cemented together by a coagulable exudation, and prolonged by rootlets from its under surface into the intestinal follicles.

Symptoms. Begins by *feverishness*, feeling of *soreness* and *distention* of the abdomen; these are followed by *pains* of a colicky character, severe and depressing, felt around the *umbilicus*, continuing for half an hour, an hour or longer, and after a longer or shorter interval occurring again; these phenomena obtain for a day or two, when *looseness of the bowels*, with distressing *pain and tenesmus* occurs, the *stools* containing *mucus*, with or without *blood*, and *shreds of membrane* or *cylindrical casts of the bowel*. Great relief is then experienced, although a *feeling* of *rawness* or *soreness* persists for a day or two.

Preceding the local manifestations of the disease are attacks of hysteria, hypochondriasis, neuralgia, nervousness or excitability.

The paroxysms recur at intervals of a week or two, or after several months; as long an interval as three years between attacks is recorded.

Prognosis. Favorable as to life, but one of the most difficult of diseases to eradicate.

Diagnosis. *Peritonitis* may be suspected until the characteristic stools occur.

Dysentery is excluded when the shreds and casts of membrane appear.

Treatment. The *diet* must be such as contains but a minimum of fecal-forming matter.

For the *pain* and *suffering*, *opium* in some form is indicated, the most effective being a hypodermatic of *morphina*.

For *constipation* during a paroxysm, an emulsion of *oleum ricini* and *terebinthina* is of benefit. To prevent a return of the paroxysms either *liq. potassii arsenitis*, gtt. j–ij t. d., or *hydrargyrum chloridum corrosivum*, gr. $\frac{1}{60}$, t. d., with a course of *oleum morrhuæ*, seems to answer in the majority of cases. Prof. Da Costa speaks highly of *pix liquida* in some form, as an alterative to the mucous membrane.

Under no circumstances must the bowels become constipated.

CHOLERA MORBUS.

Synonyms. Sporadic cholera; English cholera; bilious cholera.

Definition. An acute catarrhal inflammation of the mucous membranes of the stomach and intestines, of *sudden* onset; characterized by severe colicky pains, vomiting, purging, cold surface, rapid, feeble pulse, and prostration.

Causes. A disease of summer and early autumn, climatic influence being an important factor. Irritants of all kinds, unripe fruits and vegetables, and fermentation of foods.

Symptoms. Onset sudden and violent, and unfortunately, generally *after midnight*, with chilliness, *intense nausea*, *vomiting and purging*, accompanied with distressing intestinal *pain* or *colic*. The *vomited matter* at first consists of the ordinary contents of the stomach, and the *stools* of ordinary fæces, but soon the *discharge* by vomit and stool are *liquid*, *whitish* or of a *green* or *yellowish* tint; if the attack is severe or protracted the discharges partake of the "*rice-water*" character. The patient is rapidly *emaciated* and *reduced* in strength, the body shrinks, the *surface cold* and covered with a *clammy sweat*. *Intense thirst* is present, and when drink is given it is at once rejected.

Aggravating the distress of the patient are *severe cramps* of the muscles, and especially those of the calves.

Termination. *Mild cases* terminate without treatment, the patient able to be around the next day, although weak.

Severe cases, the vomiting and purging cease after some hours, but the patient remains weak, with irritable stomach and bowels, for a week or more.

Grave cases, the true cholera type, recover from the prostration very gradually; reaction comes on slowly and usually passes into a typhoid condition of some weeks' duration.

Prognosis. In the majority of cases favorable. The mortality about five per cent.

Diagnosis. *Asiatic cholera* and cholera morbus are easily confounded during an epidemic of the former, and there are no positive points of discrimination.

Irritant poisons, such as tartar emetic, elaterium, etc., cause vomiting and purging, similar to cholera morbus, and are only discriminated from it by the history.

Treatment. *At once*, regardless of the cause, a hypodermatic of *morphina*, gr. ⅛–⅓, and *atropina*, gr. $\frac{1}{120}$, to be repeated in an hour if no improvement; for patients who object to the hypodermatic mode, *opium* in some form by the mouth or rectum, giving preference to the liquid preparations.

At the same time *mustard* locally over the abdomen, small *pellets of ice* by the stomach, and if much depression, small doses of *brandy* or *dry champagne*. The *intense thirst* must not be gratified by the use of liquids. If the vomiting and purging continue, make use of—

℞. Bismuth subnit..... gr. xx
Acid. carbol..... gr. ss
Glycerinæ..... gtt. xx
Aquæ, ad..... ʒ iv M.

Every two or three hours.

Dr. Hartshorne strongly recommends—

℞. Spts. ammon. aromat..... ʒ j
Magnes. optim..... ʒ j
Aq. menth. pip..... ʒ iv. M.

Sig.—ʒ j every twenty minutes.

If the case is seen early, and if the diarrhœa is copious, he adds *tinct. opii camph.*, ʒ iv, to the mixture.

The closer the case approaches the true cholera type, the more severe are the *muscular cramps*, and treatment is indicated. Prof. DaCosta suggests—

℞. Chloral..... ℥iv
Cosmoline..... ℥j. M.
To be rubbed over the affected muscles.

Dr. Bartholow suggests—

℞. Chloral..... ℥iij
Morphinæ sulph..... gr. iv
Aquæ..... f℥j. M.
Sig.—*Twenty minims*, hypodermatically.

The after treatment depends upon the symptoms; generally, an *acid mixture* and *regulated diet*, with tonic doses of *quinina*, are indicated.

CHOLERA INFANTUM.

Synonyms. Choleriform diarrhœa; summer complaint.

Definition. An acute catarrhal inflammation of the mucous membrane of the stomach and intestines, together with an irritation of the sympathetic nervous system, occurring in children during their first dentition; characterized by severe colicky pains, vomiting, purging, febrile reaction and prostration.

Cause. Age; bad hygiene, or as it is now entitled, "civic malaria;" continuous high temperature; improper food; dentition; constitution, as the feeble, delicate, nervous or irritable.

Pathological Anatomy. Resembles closely, if not identical with, the phenomena of catarrhal gastritis and enteritis, together with a powerful irritation of the fibres of the sympathetic nerve.

Symptoms. The onset is *sudden* in a child previously well, or in a child suffering from a bowel affection.

Begins with *vomiting*, *purging*, abdominal *pain*, *fever*, *rapid pulse* and *intense thirst*.

The *vomited matter* is partly digested food, sero-mucous, and finally bilious, and is accompanied with distressing *retching*. The *thirst* is a marked phenomena of the disease, and ice and water will be taken incessantly, though rejected only a few moments after.

The *stools* are first partly fecal, but soon watery or serous, soaking the clothing, leaving a faint greenish or yellowish stain; their odor is musty, at times fetid; their number is from ten to twenty in the day.

Pains precede the vomiting and purging, colicky in character.

The *fever* begins at once, the temperature varying from 101° to 105°,

with morning remissions. The *pulse* is rapid and feeble, ranging from 130 to 160.

These symptoms continue but a few hours, until *rapid wasting* ensues, the body shrinks, eyes sunken and partly closed, mouth partly open, lips dry, cracked and bleeding. The child, at first *irritable* and *restless*, soon passes into semi-comatose condition, death soon following, or the symptoms slowly ameliorate, convalescence being slow and tedious.

Prognosis. Difficult to predict the result, and so care must be used in giving a prognosis. The duration of the choleraic symptoms is short, under five days, but relapses are common, and sequelæ protracted.

Diagnosis. The *entero-colitis* or inflammatory diarrhœa of childhood is constantly being mistaken for cholera infantum. The symptoms of the former are: gradual onset, with *fretfulness*, *loss of appetite*, *feverishness*, *nausea*, and moderate *vomiting*, soon followed by *diarrhœa*, the stools being semi-fluid, greenish, mixed with yellowish particles of fæces and undigested casein, with a sour odor, the "chopped spinach" stools, the *abdomen* distended and *tender*, moderate *fever* and *thirst*, having a *duration* of about two weeks.

Treatment. The first indication is to arrest the vomiting and purging, for which, use—

℞. Bismuth subnit..... gr. v–x
Mucil. acaciæ..... ℥ ss
Acidi carbolici..... gr. ½
Tinct. opii deodorat..... gtt. j
Mist. cretæ..... ℥ iss M.

Every two hours for child between one and two years.

If this fail, or the stomach will not retain it, *tinct. opii* may be given by the rectum, with *zinci sulph.* and *amylum*.

For *fever*, *quinina* or *aconitum* are indicated.

For *depression* regulated nursing or feeding, every two hours, and water or ice to quench the intense thirst, and *cognac brandy*, gtt. x–xxx, every hour or two, in water.

Locally; over epigastrium, mustard, spice poultice or turpentine stupes.

If the *nervous symptoms* become aggravated, small dose of *potassii bromidum* or *valerian*, which "reduces the reflex excitability, motility and sensibility," are indicated.

ACUTE DYSENTERY.

Synonyms. Colitis; colonitis; ulcerative colitis; flux; bloody flux.

Definition. An acute inflammation of the mucous membrane of the large intestines, either catarrhal or croupous in character; characterized by fever, tormina, tenesmus and frequent, small, mucous and bloody stools.

It occurs either in the sporadic, endemic or epidemic form.

Causes. *Sporadic* and *endemic dysentery* is caused most commonly by atmospheric changes, viz: hot days and cool nights; also from malarial attacks, and rarely, errors in diet.

Epidemic dysentery prevails in armies, jails, tenement houses, etc., propagated by decomposition of dysenteric stools, and the unfavorable hygienic surroundings.

It is not contagious.

Pathological Anatomy. *Sporadic dysentery* is catarrhal in character; congestion, swelling and œdema of the mucous membrane and sub-mucous tissue, with an over-production of mucus; the follicles are enlarged, from retention of their contents, the result of the swelling; the congested vessels often rupture; the mucous membrane softens in patches, and is detached, forming ulcers. Recovery follows, if the destruction of tissue is small, smooth cicatrices, minus gland structure, marking the site.

Epidemic dysentery is croupous in character; begins with intense congestion, swelling, and œdema of the mucous and sub-mucous tissue, with extravasations of blood and the whole mucous membrane covered with a firm fibrinous exudation; the mucous membrane softens and sloughs, leaving large ulcers and gangrenous spots. If recovery occurs, large cicatrices form, which narrow the calibre of the bowels.

The mesenteric glands enlarge, soften, and abscesses form in them; the liver becomes the seat of small abscesses, from embolic obstruction of the radicles of the portal vein; the heart muscles are flabby and more or less fatty.

Symptoms. *Catarrhal form* begins gradually, with *diarrhœa*, *loss of appetite*, *nausea*, and *very slight fever*, which continues for two or three days, when the *true dysenteric* symptoms set in, to wit, *pain* on pressure along the transverse and descending colon, *tormina* or *colicky pains* about the umbilicus, *burning pain* in the rectum, with the sense of the presence of a foreign body and desire to expel it, or *tenesmus*, which is almost constant; the *stools* for the first day or two contain more or less fecal manner, but soon they consist of a *grayish*, *tough*, *transparent mucus*, containing more or less *blood* and *pus;* during the *tormina*, *nausea*

and *vomiting* may occur; the urine scanty and high colored; the number of stools ranges from five to twenty or more in twenty-four hours.

The *duration* is about *one week*, the patient being much *emaciated* and *enfeebled*.

The *croupous* or *epidemic form* sets in suddenly, the *stools* being more frequent, containing more *blood* and *pus*, with *patches of membrane*, even *casts of the bowel*, together with more or less *gangrenous mucous* membrane; *nausea*, *vomiting*, and great *prostration*, *cold skin*, *feeble pulse* and *emaciation*, with *anxious expression*, the *odor* surrounding the patient being *fetid*.

The *duration* of the grave symptoms is three or four days, when collapse and death occur, or slow convalescence begins, continuing for weeks.

Complications. *Peritonitis; hepatic abscesses; phlebitis* of the intestinal veins; *intestinal perforation*.

Prognosis. *Catarrhal form* favorable. *Croupous* form, the prognosis is always grave, for if recovery does occur the bowel may be crippled, from loss of structure, or from narrowing of its calibre, from resulting cicatrices.

Diagnosis. *Enteritis* lacks the tenesmus and characteristic stools.

Peritonitis, when idiopathic, shows higher temperature, greater tenderness and constipation.

Treatment. Emaciation being rapid, the diet must be attended to from the onset, and be of the most nourishing character, to which stimulus should be added if much prostration occur.

The most common treatment is *opium*, combined with one or more *astringents*, viz.:—

℞. Ext. opii ..... gr. ss
Plumbi acetat ..... gr. ij M.

Every two hours; or—

℞. Pulv. opii ..... gr. ss
Plumbi acetat ..... gr. ij
Pulv. ipecac ..... gr. j M.

Every two hours; or—

℞. Pulv. ipecac comp ..... gr. x
Bismuth subnit ..... gr. xx M.

In milk, every two hours.

If the case is seen early the very best prescription possible is—

℞. Magnesii sulph ..... ℥ j
Acid. sulph. dil ..... ♏ v
Tinct. opii deodorat ..... ♏ x
Aquæ menth ..... ℥ ij M.

Every two or three hours, until fæces appear in the stools, when small doses of *opium* and *quinina* may be used.

Ipecac, in gr. xx–xl, is largely used in the first stages of dysentery, until the characteristic ipecac stools appear; the first doses being often rapidly rejected by the stomach, the treatment is difficult to pursue outside of hospital practice; but of its efficacy in many cases there can be no doubt.

The patient should be confined to bed in even the mildest attacks, and the stools removed at once and *disinfected*.

Washing out the rectum with either tepid, hot, cold or iced water, as suggested by Prof. Da Costa, adds greatly to the patient's comfort and to the decrease of the inflammatory process.

TYPHLITIS.

Synonyms. Inflammation of the cæcum; catarrh of the cæcum.

Definition. A catarrhal inflammation of the mucous membrane of the cæcum and ascending colon; characterized by pain, tenderness, constipation, and in certain cases a characteristic vomit.

Causes. In a majority of cases *mechanical*, from the lodgment of seeds or hardened fæces.

Pathological Anatomy. Similar to the catarrhal inflammation of dysentery.

Symptoms. *Pain* and *tenderness* in the right iliac fossa and along the ascending colon, with some *prominence* of this region; the *bowels* are usually *constipated*, or small liquid stools may occur from time to time, due to the accumulation of hardened fæces in the sacculated periphery of the cæcum, leaving a central cavity through which the liquid contents of the upper bowel can pass.

In *severe cases*, "the local *pain*, *tenderness* and *swelling* are greater, there are *impaction* of *fæces* and *no movements*. There are decided *fever*, *restlessness*, and also *nausea* and *vomiting*. The *vomited matters*, at first contents of stomach, then of duodenum, with bilious matter, and ultimately, if the impaction persists, of material having the odor of fæces. With these symptoms occur *great depression of the vital powers*. *Peritonitis* is finally developed by contiguity of tissue or by rupture of the bowel."

Duration. The *mild form* lasts about one week. The *severe form* may terminate in acute peritonitis, continuing about two weeks.

Prognosis. *Mild form* favorable. *Severe form* grave, although not necessarily fatal.

Diagnosis. The *mild form* is distinguished from other intestinal affections, by the localized pain and tenderness and prominence and constipation.

The *severe form* can only be distinguished from the other forms of *intestinal obstruction* by the history of the case and attack, and the results of treatment.

Treatment. The patient should be kept in bed, and placed on a strictly milk diet.

In *mild cases*, act upon the bowels, with either *oleum ricini* or *magnesii sulphas* in small doses, followed by an *opium* influence, to be maintained until convalescence is well pronounced.

In *severe cases*, begin *opium* influence at once, by hypodermatic injections of *morphina* guarded with *atropina*, continued until all symptoms of inflammation have subsided, when attempts to remove the accumulated fæces may be made by *irrigation of the bowel* with warm soap-suds, and the cautious administration of *magnesii sulphas* in one drachm doses, every two hours.

Locally. Ice bags, cold compresses, or, if patient prefers, poultices.

PERITYPHLITIS.

Synonym. Perityphlitic abscess.

Definition. An acute inflammation of the connective tissue around the cæcum, tending to the formation of an abscess; characterized by pain, swelling, and febrile reaction.

Causes. Injuries to the abdomen over the cæcum; and also extension of inflammation from cæcum by perforation. Often occurs with typhlitis.

Symptoms. Begins with a *feeling of weight*, *soreness* and *paroxysms* of *acute pain* extending into the hip, thigh and abdomen, with the development of a *hard swelling* in the *right iliac region*. Its special tendency is toward *suppuration*, which is announced by *irregular chills*, *feverishness*, and *sweats*, and a feeling of *tension* and *throbbing*. Its development is slow, and if associated with *typhlitis* the symptoms of that affection are added.

Treatment. If not associated with typhlitis, the treatment is to allay the inflammation in the first stages, by either *ice*, *locally*, or freely *painting* with *tinct. iodi;* if suppuration is evident, hasten by *poultices*, and follow by evacuation of pus with the *aspirator* or *free opening*, conjoined with the use of *opium* and *quinina*.

PROCTITIS.

Synonyms. Catarrh of the rectum; dysentery; rectitis.

Definition. A catarrhal inflammation of the mucous membrane of the rectum and anus; characterized by pain, tenesmus and frequent stools of hardened fæces, or of mucus, pus and blood.

Causes. Chief cause constipation; also sitting on damp ground or stone steps; habitual use of enemata or of purgatives; diseases of the liver.

Pathological Anatomy. Similar to those occurring in catarrhal dysentery.

Symptoms. Uneasy sensations and *burning in the rectum*, with constant desire for stool, or *tenesmus*, often so severe as to cause *prolapse of the mucous membrane*. *The stools* may be either *hardened fæces* or *scybala* from the distended colon, which cause *intense pain* when they reach the rectum; or *the stools* may be of *mucus*, *muco-pus*, or *bloody or blood-streaked*. Generally there are present *nausea*, especially during the tenesmus, *headache*, *feverishness* and *malaise*. In severe cases there is *strangury*, and with the tenesmus, *straining with urination*.

If the case is protracted and severe, inflammation of the connective tissue around the rectum occurs, causing *periproctitis*, which usually terminates in various kinds of fistulæ.

Complications. Periproctitis; peritonitis; abscesses of the liver.

Prognosis. Uncomplicated cases favorable. Either of the complications adds greatly to the gravity of the affection.

Diagnosis. In *males*, the disease cannot be confounded with any other affection, save, perhaps, hemorrhoids. In *females*, displacements of the uterus may somewhat simulate the symptoms of proctitis.

Treatment. In cases due to constipation the chief indication is to empty the bowels, for which the *magnesia mixture* mentioned for dysentery is the most suitable remedy; after which *emollient enemata*, with *opium* are indicated. *Irrigation* of the *bowel* with warm water once or twice daily assists in the liquefaction of the hardened fæces.

Cases other than those due to constipation, *emollient enemata* and *opium*, one of the best being—

℞. Ol. olivæ..... ℥ ij
Tinct. opii deodorat..... ♏ xv M.
Every three or four hours.

If symptoms of *periproctitis* occur, use *ice* to parts, and if suppuration ensue, *evacuation* by a free opening and *quinina*.

INTESTINAL OBSTRUCTION.

Synonyms. Intestinal occlusion; strangulated hernia; invagination; intestinal stricture.

Definition. A sudden or gradual closure of the intestinal canal; characterized by pain, nausea, vomiting, constipation, and finally collapse.

Causes. The numerous causes are arranged as follows, viz:—

1. *Accumulations within the bowel*, to wit: hardened fæces, foreign bodies, etc.

2. *Strictures*, to wit: from cancer, ulceration, cicatrices, etc.

3. *Pressure against the bowel*, to wit: peritoneal adhesions, tumors, abnormal growths, etc.

4. *Strangulations*, to wit: the numerous forms of hernia.

5. *Invagination* or intussusception, the most common.

6. *Twisting* or rotation of the bowel.

Pathological Anatomy. Invagination is the only form calling for special description. It is most usually caused by the lower portion of the ileum slipping down into the cæcum, as the finger of a glove might be invaginated, causing thus an actual mechanical obstruction; this is produced by a spasm of the ileum, whereby its calibre is greatly diminished, thus permitting its descent into the lower bowel. Resulting from this occlusion or compression, are congestion, inflammation, with secondary constitutional reaction and death, or more rarely the invaginated bowel sloughs off, and is voided by stool, union taking place at its site and recovery following.

Symptoms. The onset of the symptoms may be either *sudden* or *gradual*, and are as follows:—

Constipation, with more or less severe *colicky pains*, not relieved by either purgatives or injections; *feeling of weight* and *soreness*, with *distention* of the abdomen and *nausea* and *vomiting;* the symptoms all grow more pronounced, the *pain* becoming *violent*, *tenderness* in limited areas, the *vomiting* becoming *stercoraceous*, the abdomen hard and tense, the *eyes sunken*, the *pulse quick* and *feeble*, the *skin cold* and covered with a clammy sweat. The above continue more or less pronounced for a week to ten days, when collapse and death occur, or more rarely gradual return to health.

Cases occur rarely in which small, fecal, muco-purulent stools containing more or less blood exist, instead of constipation.

Prognosis. Always grave, but guided by the cause. *Impacted fæces* favorable. *Invagination* less favorable, but recoveries occur; the longer the symptoms continue, the more favorable the outlook. *Strangulations* unfavorable, but many recoveries recorded. *Strictures*, due to cancer, cicatrized ulcers and the like, are the most unfavorable.

Diagnosis. One of the most difficult, and can only be solved by a careful study of the case along with the different causes producing the affection. The site of the occlusion can rarely be determined positively.

Treatment. Stop all forms of purgatives as soon as the diagnosis of obstruction is determined.

Opium is indicated in all forms, and is best administered in the form of *morphina*, combined with small doses of *atropina*, hypodermatically.

If *impacted fæces* is the cause, *irrigation* by tepid soap-suds seems beneficial.

If *invagination*, raising the buttocks and lowering the chest, and repeated *injections* of *warmed oil*, are recommended. Distention of the bowel by *pumping air* through long rectal tubes, or disengage *carbonic acid gas* in the bowel, by first injecting a solution of *sodii bicarbonas*, and follow this with a solution of *acidum tartaricum*, about one drachm of each, pressure being made against the anus, to prevent escape.

Flatulent distention can be removed by the long *aspirator* needle.

Laparotomy is no doubt the operation of the future, when our means of diagnosticating the location of the trouble is more perfect.

DISEASES OF THE PERITONEUM.

PERITONITIS.

Synonym. Inflammation of the peritoneum.

Definition. A fibrinous inflammation of the peritoneum, either *acute* or *chronic* in character, characterized by fever, pain, tenderness, vomiting and prostration. It may be limited to a part—*local*, or it may involve the whole membrane—*general*, peritonitis.

Causes. Intense cold, protracted irritation by blisters, and blows upon the abdomen, cause *primary* peritonitis.

Inflammation of the abdominal or pelvic organs, or their perforation, or during the course of tuberculosis, pyæmia or albuminuria, cause *secondary* peritonitis.

Pathological Anatomy. *Acute form;* hyperæmia of the serous membrane, the capillaries distended and occasional extravasations of blood from their rupture; the normal secretion is arrested, and the shiny membrane becomes dull and opaque, from an exudation of pure fibrin, which is adhesive, glueing the parts together; if the inflammatory action is now arrested, it is termed *adhesive* peritonitis; if, however, the action progresses, an effusion of serous fluid, of a reddish or bright yellow color, is poured out into the peritoneal cavity, the amount varying from a few ounces to several gallons; this is termed *exudative* peritonitis. If recovery results, the fluid is absorbed, with much of the solid exudation, the unabsorbed portions forming adhesions between the membrane and the different abdominal organs, often causing great deformity and irregularity in their relations.

The chronic form follows the acute, or is associated with tuberculosis, Bright's disease, or cirrhosis of the liver.

The membrane is irregularly thickened, opaque, with strong adhesions to one or more coils of intestines, the liver, spleen, etc.; the quantity of fluid present is small, purulent or sero-purulent in character, and encysted by the agglutinated membrane.

Symptoms. *Acute form;* when idiopathic, onset sudden, with *chill*, *fever*, 102–3°, *pulse* 100–140, wiry and tense, *severe pain*, cutting or boring in character, and *tenderness*, becoming so great that the slightest touch aggravates it, the *decubitus* being on the back, with flexed thighs; the *abdomen distended* and *rigid*, from *constipation* and *meteorism; impaired appetite*, *nausea* and *vomiting* are almost constant, with *costal respiration* and *hiccough*.

These symptoms continue from six to eight days, when they begin to ameliorate and a tedious convalescence ensues, or pain and tenderness grow more marked, strength fails, surface cold, pulse rapid, and collapse, with hippocratic face, to wit: anxious expression, pinched features, sunken eyes and drawn upper lip.

Secondary form, *from extension*, temperature increases, pulse becomes tense, exaggeration of pain and vomiting; *from perforation*, announced by severe pain and symptoms of shock.

Chronic form; irregular *chills*, *fever* and *sweats; distended abdomen*, *constipation*, alternating with *diarrhœa;* diffused *tenderness*, with *points of intenseness* and *hardness; colicky pains* during digestion, *rapid emaciation* and failure of strength. Usually, the lower portions of abdomen give a dull note on percussion, from presence of fluids, or scattered points of dullness, showing presence of encysted fluid.

Prognosis. *Idiopathic cases* favorable, and especially if continue longer than a week, as fatal cases usually end during the first week. Cases from perforation unfavorable.

Chronic peritonitis being generally of tuberculous origin, the prognosis is unfavorable, although partial or complete recovery results in the cases following the acute form of the disease.

Diagnosis. *Acute gastritis* differs from peritonitis in having a history of corrosive poisoning, severe pain, limited to stomach, early and severe vomiting; while the latter has fever, diffused abdominal pain and tenderness, with decided distention.

Acute enteritis has localized pain and tenderness with marked diarrhœa.

Rheumatism of the abdominal muscles occurs with a rheumatic history, is subacute, lacks the great distention of peritonitis, and while tenderness exists, it is not aggravated by deeper pressure.

Treatment. *Acute form:* Idiopathic and robust cases, locally, *leeches* or *wet cups*, followed by *cold* or *hot* applications, as most agreeable to the patient; adynamic cases, *dry cups*, followed by warm applications medicated with *tinct. opii.*

Opium and *quinina* are the remedies indicated at the onset of the disease, to wit: at once hypodermatic of *morphina*, gr. ¼–⅓, maintaining the effect by hourly doses of either *morphina* or *opium*, by the mouth. Prof. Clark ascertained the tolerance of opium in this disease, by the tremendous amounts used in a case under his care; the first day he gave 200 grs., the second day 472 grs., the third day 236 grs., fourth day 120 grs., fifth day 54 grs., sixth day 22 grs., and on the seventh day 8 grains. Prof. Clark found that, as a rule, however, *morphina*, gr. $\frac{1}{6}$–$\frac{1}{4}$, every two hours, would maintain the effects of the drug. *Quinina*, gr. v, every four hours until exudation, after which gr. ij, four times a day, is of marked benefit.

The decline of the vital powers must be averted by *regulated nutrition* and *free stimulation*.

During *convalescence*, perfect quiet, nourishing aliment, moderate stimulants, scattered flying blisters, and the following:—

℞. Potassii iodidi..... gr. v
Ferri pyrophos..... gr. ij
Spts. lavend. comp..... ♏ xv
Syr. aurantii cortex.....ad..... ℥ ij M.

Every six hours,

should constitute the treatment, with tonic doses of *quinina*.

Peritonitis from *perforation*, absolute quiet, hypodermatic injections of *morphina*, ice locally, and stimulants per mouth or rectum.

Chronic peritonitis; locally, *tinct. iodi*, and internally, *opium*, for pain; *potassii iodidum* as an absorbent, with nourishing diet, *ol. morrhuæ* and *stimulants*, and rest in bed.

ASCITES.

Synonyms. Dropsy of the abdomen; peritoneal dropsy.

Definition. A collection of serous fluid in the abdomen, or more correctly in the peritoneal cavity; characterized by swollen abdomen, fluctuation, dullness on percussion, displacement of viscera, embarrassed respiration, *plus* the symptoms of its cause.

Causes. Ascites may form part of a general dropsy, to wit: cardiac or nephritic; the most common factor in its production is *mechanical obstruction* of the portal system, from cirrhosis of the liver, tumors, diseases of the heart or lungs.

Pathological Anatomy. The quantity of fluid in the peritoneal sac ranges from a few ounces to many gallons. It is generally of a straw color, or at times greenish, and is transparent, having an alkaline reaction. When blood is present in any great quantity, it points to cancer as a cause. The peritoneum becomes cloudy, sodden, and thickened, from long contact of the fluid.

Symptoms. The onset is insidious, and considerable *swelling of the abdomen* occurs before the attention is attracted. *Constipation*, from pressure of the fluid on the sigmoid flexure. *Scanty urine*, from pressure on the renal vessels. *Embarrassed respiration* and *cardiac action*, from pressure of the diaphragm upwards. The *umbilicus* is forced *outward*.

Physical signs; on *palpation*, a peculiar wave-like impulse is imparted to the hand laying on the side of the abdomen, while gently tapping the opposite side.

Percussion; patient erect, the fluid distends the lower abdominal region, with *dullness* over site of fluid and *tympanitic note* above; if the patient turns on his side the fluid changes, and dullness over the fluid, tympanitic over the distended intestines.

Prognosis. Influenced by the cause producing it. *Idiopathic ascites*, which is most rare, terminates in health within a few weeks. If *peritoneal*, generally favorable. If from *organic disease*, most unfavorable, for while it may be removed, it rapidly returns.

Diagnosis. *Ovarian tumors* differ from ascites in history, enlargement limited to the iliac fossa, instead of uniform abdominal enlargement, does not change its position when the patient changes posture, and by detection of a tumor by conjoined manipulation through vagina, or by rectal exploration.

Pregnancy differs from ascites in the character of the enlargement, the history, absence of menses, increase of mammæ, change in the neck of the uterus, absence of fluctuation, and presence of the sounds of the fœtal heart.

Distention of the bladder has been mistaken for ascites; the points of distinction are, in the former the history, presence of tenderness over bladder, rounded outline of the percussion dullness, and the relief afforded by the catheter.

Chronic Peritonitis is differentiated by the history, pain, tenderness, more or less vomiting, thickened abdominal walls, and its generally being associated with tubercle or cancer.

Chronic Tympanites presents the enlarged abdomen, but lacks the history, the dullness and the fluctuation, giving instead a tense abdomen and an universal tympanitic note.

Treatment. The first indication is to treat the cause of the ascites, and the second to remove the fluid.

Three modes present themselves, to wit: *first*, by hydragogue cathartics, *second*, diuretics, and *third*, tapping. The first and second modes may be combined, as follows:

℞. Pulv. jalapæ comp..... ..... ℥j ij

In water, an hour before breakfast, and

℞. Potassii acetat..... gr. x–xx
Tinct. scillæ..... ℥ss
Infus. digitalis ..... f℥iss M.

Every six hours.

If these fail, as they certainly will after a time, the embarrassed respiration and cardiac action call for *tapping*, which may be done with the *trocar*, or better still, the *aspirator*.

DISEASES OF THE BILIARY PASSAGES.

CATARRHAL JAUNDICE.

Synonyms. Catarrh of the bile ducts; icterus.

Definition. An acute catarrhal inflammation of the mucous membrane of the bile ducts and of the duodenum; characterized by gastro-intestinal derangements, yellowness of the skin, feverishness and mental depression.

Causes. Excess in eating and drinking; a debauch; malaria; climatic, as cool nights succeeding warm days.

Pathological Anatomy. The mucous membrane of one or more of the bile ducts or of the duodenum become hyperæmic, swollen and thickened, from an effusion of serum into the sub-mucous tissue; the result of this condition is closure of the biliary passages, thereby impeding the outward flow of bile. The bile in the hepatic ducts being retained by the obstruction, the result is a staining of the liver substance and an absorption of bile and its appearance in the blood.

Symptoms. Begins by *epigastric distress*, *coated tongue*, *impaired appetite*, *nausea*, with, perhaps, *vomiting* and *looseness of the bowels* and *slight feverishness*, the phenomena of a gastro-intestinal catarrh. In from three to five days the *eyes become yellow*, and *jaundice* gradually appears over the whole body; the feverishness disappears, the *skin* becomes harsh, dry and *itchy*, the *bowels constipated*, the *stools whitish* or *clay-colored*, accompanied with much *flatus* and *colicky pains;* the *urine heavy* and *dark*, loaded with urates and containing biliary elements.

A few drops of the urine placed on a whitish surface, and a drop or two of nitric acid made to flow against it, will exhibit the following "*play of colors:*" a *greenish* tint, from the conversion of bilirubin into biliverdin, quickly followed by *blue*, *violet*, *red*, and *yellow*, or *brown*.

When the *jaundice* is complete, the *surface is cold*, the *heart's action slowed*, the *mind torpid* and *greatly depressed*, and pain or tenderness on pressure over the hepatic region.

Duration. In from three to five days after the jaundice appears, the symptoms subside, save the torpid bowels, depression and discolored skin, which slowly disappear, often requiring a week or two.

Prognosis. Always favorable; if the attacks are of frequent occurrence, however, they are apt to lead to organic hepatic disease.

Diagnosis. After the appearance of jaundice mistakes are impossible. The numerous diseases of which jaundice is a symptom will be differentiated when treating of them.

Treatment. At the onset *quinina*, gr. x, morning and night, may modify the disease, and as soon as the diagnosis is established the indications are for *diaphoresis*, *diuretics* and *purgatives*.

For *diaphoresis*, the *warm bath*, to which *potassii carbonas*, ℥ j, may be added, morning and night.

For *diuresis*, *bitartrate of potassa lemonade*, every four hours.

For *purgation*, either *sodii pyrophos.*, ℥ j–ij, every four hours, well diluted, or *ammonii murias*, gr. xv–xx, every five hours, well diluted.

Restricted diet, avoiding all starchy, fatty or saccharine articles, milk being the most suitable.

For *convalescence*—

℞. Acid. nitrohydrochlorici dil..... gtt. v–x
Elix. taraxaci comp..... ℥ j–ij M.
Before meals.

BILIARY CALCULI.

Synonyms. Hepatic calculi; gall stones; hepatic colic.

Definition. Concretions originating in the gall-bladder or biliary ducts, derived partly or entirely from the constituents of the bile. Their presence is generally unrecognized until one or more attempt to pass along the ducts, when an attack of *hepatic colic* is produced.

Causes. Gall stones result from the *precipitation* of the crystallizable *cholesterine* and its combination with inspissated mucus in the gall bladder or ducts.

A disease of middle life, and more frequent in the obese, and in women.

Gall stones are said to be common in carcinoma of the stomach or liver.

Pathological Anatomy. Cholesterine is the chief constituent of biliary calculi. Commonly several stones exist, and rarely one; as many as six hundred are recorded. They are generally found in the gall bladder or cystic duct, rarely in the liver or hepatic duct.

Symptoms. *Hepatic colic* begins suddenly at the moment a gall stone passes from the gall-bladder to the cystic duct.

The patient is seized with a *piercing, agonizing pain* in the region of the gall-bladder, and spreading over the abdomen, right chest and shoulder; the *abdominal muscles* are *cramped* and *tender;* there is *nausea* and

vomiting, a small, *feeble pulse*, *cool skin*, *pale*, *distorted*, *anxious face*, with, may be, fainting, or spasmodic trembling, or chills.

The paroxysm continues from an hour or two to several days, with remissions, but entire relief is not afforded until the stone reaches the duodenum, when the pain ceases suddenly.

Jaundice usually succeeds the paroxysm of pain. When the calculi reaches the intestines, the pain, nausea and vomiting cease, the appetite returns, and the jaundice soon disappears.

Should the calculi become impacted, *ulcerative perforation* and consequent *peritonitis* follow, the calculi discharging by the intestine, stomach, or through the abdominal walls.

Prognosis. Usual termination is in health. The prognosis becoming more unfavorable if ulcerative perforation results.

Diagnosis. The malady should not be mistaken if are present *severe pain*, *nausea*, *vomiting*, suddenly terminating, followed by slight jaundice.

Treatment. For the *colic*, hypodermatic injections of *morphina*, gr. $\frac{1}{6}$–$\frac{1}{3}$–$\frac{1}{2}$, combined with *atropina* gr. $\frac{1}{120}$, and warm fomentations over the hepatic region, are indicated.

Dr. Bartholow strongly urges the following prophylactic treatment. Carefully regulated diet, abstinence from all fatty and saccharine substances, daily exercise, stoppage of all excesses, and the long use of *sodii phosphas*, ℥j, before meals, well diluted, to which may be added, if gastro-intestinal catarrh be present, *sodii arsenias*, gr. $\frac{1}{20}$, together with either Vichy or Saratoga Vichy water.

DISEASES OF THE LIVER.

CONGESTION OF THE LIVER.

Synonyms. Torpid liver; biliousness.

Definition. An abnormal fullness of the vessels of the liver, with consequent enlargement of that organ; it is termed *active* when arterial; *passive* when venous. The condition is characterized by torpidity of the digestive and mental functions, and slight jaundice.

Causes. *Active congestion;* malaria; excesses in eating and drinking; alcoholic or malt liquors.

Passive congestion; cardiac and pulmonary diseases.

Pathological Anatomy. The liver is enlarged in all directions, and is abnormally full of blood. Cases due to obstructive diseases of the heart or lungs present the so-called "nutmeg liver," to wit: "At the centre of each lobule the dilated radicle of the hepatic vein, enlarged and congested, may be discerned, while the neighboring parts of the lobule are pale," the radicles of the portal vein containing less blood.

Long continued congestion establishes atrophic degeneration of the organ; the decrease in size is confounded with the condition of cirrhosis, but the "atrophic liver" is smooth, while the "cirrhotic liver" is nodulated.

Symptoms. *Active congestion;* following cause rapidly produced *malaise, aching of limbs,* evening *feverishness, headache, yellowish tongue,* disgust for food, *nausea,* and, may be, *vomiting, constipation, scanty,* high-colored *urine,* with feeling of *fullness, weight,* and *soreness* in hepatic region, and slight *jaundice,* the *eye yellow,* and the *complexion muddy.*

Passive congestion; onset gradual, with feeling of weight and fullness in hepatic region, slight jaundice, and symptoms of gastro-intestinal catarrh.

On percussion the hepatic dullness is increased in all directions.

Prognosis. *Active congestion* favorable, unless repeated attacks rapidly succeeding each other, when "atrophic degeneration" results.

Passive congestion controlled entirely by the cause.

Diagnosis. Acute congestion is continually confounded with *catarrhal jaundice;* the latter begins with marked gastro-intestinal symptoms and distinct jaundice; in the former these are less marked.

Obstructive congestion is diagnosticated by the clinical history.

Atrophic or *nutmeg liver* will be differentiated from cirrhotic liver when speaking of the latter.

Treatment. Attacks due to *excesses in eating and drinking:*—

℞. Sodii bicarb..... gr. x
Hydrargyri chlor. mite..... gr. iij–v

followed by

℞. Acidi nitrohydrochlorici dil..... ♏viiss
Elix. taraxaci c..... ℥ij.

Before meals, and care in diet.

Attacks due to *malaria;* the above purgative followed by *quininæ sulph.*, gr. iv, every four hours. Attacks occurring with cardiac or pulmonary diseases must be managed by treating the cause.

Locally, in acute attacks, hot cloths, sinapisms, etc., are of benefit.

In *chronic cases* benefit follows, *elix. quininæ ferri et strychninæ,* ℥j, three times a day, and great comfort and support is given by the use of the

"*hydropathic belt*," which is made of stout muslin shaped to the abdomen, with cross pieces of tape on the inner side, which keeps next to the skin a fold of cloth wrung out of cold water, and a piece of waterproof cloth or oiled silk, to prevent evaporation.

ABSCESS OF THE LIVER.

Synonyms. Parenchymatous hepatitis; acute hepatitis; suppurative hepatitis.

Definition. A diffused or circumscribed inflammation of the liver cells, resulting in suppuration, the abscesses being sometimes single and sometimes double; characterized by irregular febrile attacks, hepatic tenderness and symptoms of deranged gastro-intestinal and hepatic functions.

Causes. The result of the absorption of putrid material by portal radicles in dysentery; ulcer of the stomach; malaria; blows and injuries; heat; pyæmia.

Pathological Anatomy. Hyperæmia, swelling, effusion of lymph, degeneration and softening of hepatic cells; suppuration, beginning in points in the lobules and coalescing. The abscess walls consist of the liver structure, more or less changed.

The abscess may advance toward the surface of the liver, bursting into the peritoneum, intestines, stomach, gall bladder, hepatic duct or vein, or into the pleura or lungs, or externally through abdominal walls; after the discharge of pus, cicatrization, or the pus may be absorbed, the tissues around forming a dense cicatrix.

Symptoms. Very obscure. *Fever* simulating markedly intermittent or remittent; disorders of gastro-intestinal canal, with *obstinate vomiting*, *debility*, great *irritability* of the *nervous system*, slight *jaundice*, and if of long duration, *typhoid symptoms*.

Locally, if the abscess is near the surface, *prominence of hepatic region*, *throbbing*, limited *tenderness*, and if it tends to the surface, redness, œdema and fluctuation. The abscess may burst into intestines, stomach, lungs, pleura, etc., the symptoms of which will be pronounced.

Prognosis. Unfavorable. Recoveries, however, do occur. If the abscess bursts into the lungs, bowels, or externally through abdominal wall, the case is more favorable.

Diagnosis. Hepatic abscess may be confounded with hydatids of the liver, hepatic or gastric cancer, abscess of the abdominal walls, and purulent effusion in the right pleural cavity.

The differentiation is most difficult, but *great aid* is obtained by the use of the *aspirator*.

Treatment. *Symptomatic*, and when *pus* is present, use of *aspirator* to remove it, and sustaining treatment, viz.: *quinina*, *ferrum*, *alcohol* and *oleum morrhuæ*.

ACUTE YELLOW ATROPHY.

Synonyms. General parenchymatous hepatitis; malignant jaundice; hemorrhagic icterus.

Definition. An acute diffused or general inflammation of the hepatic cells, resulting in their complete disintegration; characterized by diminution in the size of the liver, deep jaundice, and profound disturbance of the nervous system; terminating in death, usually, within one week.

Causes. Unsettled. It occurs most frequently in young pregnant women, from the third to the sixth month of pregnancy. Other causes, venereal excesses; syphilis; action of phosphorus, arsenic or antimony.

Pathological Anatomy. Begins with hyperæmia of the cells, with a grayish exudation between the lobules, followed by softening, dull yellow color, and disappearance of the cells, fat globules taking their place. The liver is reduced in size and in weight. The peritoneum covering the liver is thrown into folds. The spleen is enlarged. The kidneys undergo degeneration. The blood contains a large amount of urea and considerable leucin. The urine is loaded with bile pigment, and contains albumen.

Symptoms. *Prodromic period;* begins as a *gastro-intestinal catarrh*, coated tongue, nausea, vomiting, tenderness over epigastrium, headache, quickened pulse, slight fever and slight *jaundice*.

Icteric period; jaundice deepens, pulse slows, headache increases, and great and obstinate *sleeplessness*.

Toxæmic period; fever, rapid *pulse*, more complete *jaundice*, *pain*, nausea, *vomiting of blackish*, *grumous blood*, or "coffee grounds," *tarry stools*, ecchymotic patches, *convulsions*, or epileptiform attacks, *coma*, insensibility, death.

Percussion shows markedly *decreased* hepatic dullness.

Duration. Short. After appearance of jaundice, about six days.

Prognosis. Unfavorable.

Treatment. Symptomatic entirely. Dr. Bartholow "advises the trial of very small doses of phosphorus, as early as possible, as this remedy affects the organ specifically, and an action of antagonism may be discovered between them."

SCLEROSIS OF THE LIVER.

Synonyms. Interstitial hepatitis; cirrhosis; hob-nailed liver; gin-drinkers' liver.

Definition. An inflammation of the intervening connective tissue of the liver, chronic in its progress, resulting in an induration or hardening of the organ; characterized by gastro-intestinal catarrh, emaciation, slight jaundice and ascites.

Causes. The prolonged use of alcoholic stimulants, gin, whiskey, beer, porter, etc.; syphilis.

Pathological Anatomy. *First stage;* hyperæmia of the connective tissue (Glisson's capsule) of the liver, and the development of brownish-red connective tissue elements, whereby the organ is increased in size and density; this increase of the connective tissue presses upon the hepatic cells, causing them to undergo fatty degeneration. *Second stage;* the newly formed imperfectly developed connective tissue contracts, causing decrease and induration of the organ, its surface being nodulated. The hepatic and portal circulation is obstructed, from obliteration of their radicles.

The hepatic peritoneum is thickened and opaque, and adhesions are formed to the diaphragm, gall-bladder, etc.

Cases occur in which the sclerosis takes place while the organ continues enlarged; these are known as *hypertrophic sclerosis.*

Symptoms. No characteristic symptoms of the early stage of the affection. Persistent *gastro-intestinal catarrh*, with attacks of *jaundice*, in a drinking man, are suspicious. Symptoms of second stage are, *abdominal dropsy*, *enlarged* superficial *abdominal veins*, *dyspepsia*, localized peritoneal *pain*, *hemorrhages* from *stomach* or *intestines*, muddy or slightly *jaundiced* skin, *decided emaciation.*

Prognosis. Terminates in death. Average duration after appearance of dropsy, one year.

Diagnosis. *Atrophy of the liver*, or the nutmeg liver, is almost always confounded with sclerosis; the former occurs most commonly with obstructive diseases of the heart and lungs, and the surface of the organ is not nodulated, nor is there a history of alcoholism.

Cancer and tubercle of the peritoneum have many symptoms akin to sclerosis. The points of differentiation are, great tenderness over abdomen, rapidly developed ascites, rapid decline in strength and flesh, absence of jaundice, absence of long-continued dyspepsia, absence of hepatic changes on percussion, and the presence of tubercle or cancer deposits in other organs.

Treatment. For the changes in the hepatic structure, little if anything can be done; the following are some of the remedies recommended, to wit: *hydrargyri chlor. corro.*, gr., $\frac{1}{60}$–$\frac{1}{40}$, three times a day; *hydrargyri chlor. mite*, gr. $\frac{1}{100}$, three times a day; *aurii et sodii chloridi*, gr. $\frac{1}{30}$, after meals; *sodii phosphas*, ℥ss–℥j, after meals.

The diet must be regulated, *milk* being the most suitable, and avoiding fatty and saccharine foods.

The abdominal dropsy may be temporarily benefited by *purgatives* and *diuretics*, but sooner or later *tapping* becomes imperative.

AMYLOID LIVER.

Synonyms. Waxy liver; lardaceous liver; scrofulous liver; albuminoid liver.

Definition. A peculiar infiltration into, or a degeneration of, the structure of the liver by the deposit of an albuminoid material, which has been termed *amyloid*, from a superficial resemblance to starch granules.

Causes. The chief cause is prolonged suppuration, especially of the bones; coxalgia; syphilis; cancer.

Pathological Anatomy. The liver is uniformly enlarged. It presents a pale, glistening, translucent appearance, and has a doughy consistence. On section, the surface is homogeneous, is anæmic and whitish. The deposit begins in the arterioles and capillaries, finally closing them.

The reaction with iodine and sulphuric acid affords a certain test of the amyloid or albuminoid deposits. After thorough cleansing brush over parts a solution of iodine with iodide of potassium in water, when they will assume a mahogany color, and if diluted sulphuric acid is added, a violet or bluish tint is produced.

A pretty reaction is to take a one per cent. solution of anilin violet, which strikes a red or pink color with the amyloid or albuminoid material, while the unaltered tissues are stained blue, thus showing a beautiful contrast.

The amyloid change involves the spleen, kidney, intestines and other organs.

Symptoms. Nothing characteristic. Hepatic dullness increased, with prominence over the liver. Absence of pain. Splenic dullness increased. Emaciation and anæmia. Urine increased in amount, pale, and containing some albumen, due to amyloid changes in the kidneys. Dis-

orders of digestion, with diarrhœa, due to amyloid changes in the intestines. Jaundice is rare. Ascites seldom occurs.

Prognosis. Unfavorable. The progress is rapid or slow, depending upon the cause.

Treatment. No specific. Symptomatic, with prolonged use of *ferrum*, *syr. calcii lacto-phosphas* and *oleum morrhuæ*.

HEPATIC CANCER.

Synonym. Carcinoma of the liver.

Definition. A peculiar morbid growth, progressively destroying the hepatic tissue; characterized by disorders of digestion, anæmia, emaciation, jaundice and ascites, and terminating in the death of the patient.

Causes. Hereditary, when it is termed *primary* cancer; from extension from other organs, when it is termed *secondary* cancer. It is a disease of advanced life, from forty to sixty years.

Pathological Anatomy. The most common variety of cancer of the liver is a compound of the medullary and scirrhus.

The cancer cells develop from the interlobular connective tissue, and as they grow the hepatic cells disappear. The branches of the hepatic artery enlarge and permeate the growth, while the branches of the portal vein are compressed and atrophied, thereby blocking up the portal circulation.

The cancer may develop in nodules or masses, or may be diffused; the nodules vary in size, and those on the surface are rounded, with a central umbilication. The peritoneum is adherent, cloudy and thickened.

Symptoms. The recognition of hepatic cancer is preceded by a history of dyspepsia, flatulency and constipation. Then *uneasiness*, *weight* and *pain*, increased by pressure, are noticed; *jaundice*, *ascites*, occasional intestinal *hemorrhages*, *emaciation*, *feebleness*, *anæmia*, *cold*, *dry*, *harsh skin*, *pinched features*, with *dejected*, worn *expression*. *Fever never occurs.* The hepatic dullness is increased, pain on palpation, and the liver is indurated, irregular and nodulated.

The duration is less than a year from the time the disease is recognized.

Prognosis. Always terminates in death.

Diagnosis. The points of differentiation are the *age*, *cachexia*, *pain* and *tenderness*, *enlarged liver* with *hard nodules*, and *rapid progress*.

Treatment. Entirely symptomatic. Sooner or later *opium* must be used to relieve the terrible and persistent pain.

DISEASES OF THE KIDNEYS.

THE URINE.

The *normal quantity* of urine varies from 20 to 50 *ounces* in the twenty-four hours; it is *decreased* by free perspiration and *increased* by chilling of the skin.

The *normal color* is light amber, due to *urobilin;* the intensity is deepened if the quantity is decreased, and *vice versa.*

The *normal reaction* is slightly *acid*, due to the *acid sodic phosphate*, *uric* and *hippuric acids.* After meals it may be *neutral* or even *alkaline.*

The *normal specific gravity* varies from 1.008 to 1.020; it is *low* when an increased quantity is passed and *high* when the quantity is diminished.

The most important organic and inorganic solid constituents held in solution are, *urea* (the index of nitrogenous excretion), from 308 to 617 grains daily; *uric acid*, from 6 to 12 grains; *urates of sodium, ammonium, potassium, calcium* and *magnesium*, from 9 to 14 grains; *phosphates of sodium*, etc., from 12 to 45 grains, and *chlorides of sodium*, etc., from 154 to 247 grains daily.

I. Quantitative test for *urea*, by hypo-bromite of sodium (Davy's Method).

Fill a graduated glass tube one-third full of *mercury*, and add one-half drachm of the 24 hours' urine; then fill the tube evenly full with a saturated solution of *hypo-bromite of sodium*, and close it with the thumb *immediately;* invert the tube and place its open end beneath a sat. sol. of *chloride of sodium;* the mercury flows out and is replaced by the solution of salt; *nitrogen gas* is disengaged from the urea in the upper part of the tube.

Each *cubic inch of gas* represents .645 gr. of urea in the half drachm, from which the amount passed in 24 hours may be calculated.

II. Tests for *urates* and *uric acid* by nitric acid.

Urine containing an excess of urates and uric acid, on *cooling*, precipitates them (viz: "brickdust deposits" in "pot de chambre"). *Heat* dissolves them to a certain extent.

Nitric acid deprives the soluble *neutral urates* of their bases, and produces, at first, a faint, milky precipitate of amorphous *acid urates;* adding more acid, the still less soluble *red crystals of uric acid* are deposited.

Put a small quantity of *nitric acid* in a test tube, and pour the urine carefully down the sides of the tube upon it, and a *zone* of *yellowish-red uric acid* and altered coloring matter will form at their union; and a dense, milky *zone* of *acid* urates above this, which, however, dissolves upon agitation. (See albumen test.)

III. Quantitative test for *uric acid* by nitric acid.

To *three ounces* of the 24 hours' urine (after being slightly acidulated, boiled and filtered while hot) add *one-tenth* as much *nitric acid;* place in a cool place for 24 hours, then collect the deposit of *uric acid* on a weighed filter, wash it thoroughly, and dry at 212° F. The increased weight represents the uric acid in part excreted, approximately.

IV. Test for the earthy and alkaline *phosphates* by the magnesian fluid.

Heat or liquor potassa increases the cloudiness caused by earthy calcium and magnesium phosphates. *Acetic* or *nitric acid* clears it by dissolving them.

To two ounces of urine add one-third as much of the following solution, viz: ℞. Magnesium sulph., ammonium chlorid. puræ, liquor ammoniæ, each one part, aquæ destil., eight parts; if the precipitate has a *milky*, cloudy appearance, the quantity of phosphates are normal; if *creamy*, the *phosphates* are in excess.

V. Test for the *chlorides* by nitrate of silver.

To a convenient quantity of urine add a small amount of nitric acid, to prevent the formation of the phosphates and other salts of silver; filter this if cloudy; add to this *one drop* of a solution of nitrate of silver (1 part to 8) and the precipitate of white cheesy lumps of *chloride of silver* denotes that the amount of *chlorides* are normal; if, however, only a *faint milkiness* occurs, the *chlorides* are diminished.

VI. Test for *mucus* by acetic acid and liquor iodi comp.

Mucus alone is not visible, but causes *cloudiness*, from having entangled mucus or pus corpuscles, epithelium, granules of sodium urate, crystals of oxalate of lime and uric acid in various amounts.

Add to the urine a little *acetic acid*, or, in addition, a few drops of *liquor iodi comp.*, when threads or bands of *mucin* are made visible. The addition of *nitric acid* dissolves them.

VII. Tests for *albumen* by heat and nitric acid.

Slightly acidulate the urine, if necessary, by addition of nitric or acetic acid, and *boil;* this causes a *white* deposit of *coagulated albumen*, which is not dissolved by nitric acid, unless in excess.

Nitric acid causes a *white* deposit of *coagulated albumen*, which is dissolved if a large excess is added. A delicate test is to put the *nitric acid* in the tube first, and then gradually pour the urine down the side of the tube upon it, when a *white zone* or *ring* of *coagulated albumen* appears. *Precaution*, see tests Nos. 3, 4, 9 and 11.

VIII. Quantitative test for *albumen*. Approximately.

Add a few drops of *nitric acid* to a proportion of the urine, and *boil;* set this away for 24 hours, and the proportionate depth of the resulting deposit is the comparative indication, viz., ¼–½, etc.

IX. Test for *blood* by heat and nitric acid.

Heat or nitric acid causes deposit of albumen, with the coloring matter changed to a *dirty brown*.

X. Test for *blood* by heat and caustic potash (Heller's).

Heat the urine, then add *caustic potash* and *heat* anew. The phosphates are thus precipitated, taking with them the coloring matter of the blood, which imparts a *dirty, yellowish-red* color to the sediment viewed by reflected light, and when seen by transmitted light, gives a splendid *blood-red color*.

Neither the coloring matter of the blood nor that of the bile is precipitated with the phosphates, so that coloration of urine which shows this reaction cannot be ascribed to the presence of the latter pigments.

When the quantity of blood in the urine is very large, it is of a *dark* or *brownish red*, and after standing, forms a coagulum of blood at the bottom of the vessel.

XI. Test for *pus* by liquor potassa.

Caution. Heat or nitric acid causes coagulation of the albumen in pus.

Add to the urine, or preferably to its deposit from standing, an equal volume of *liquor potassa;* when well mixed, a *viscid gelatinous fluid* or mass is formed, which pours like the white of an egg, or jelly.

XII. Test for *bile* by "fuming" or red nitric acid.

Allow a specimen of urine and a few drops of red "fuming" *nitric acid* to gradually intermingle on a porcelain dish, and a "play of colors," *green*, *blue*, *violet*, *red* and *yellow* or *brown*, occur, if biliary coloring matter is present.

XIII. Test for *bile pigment* by pure hydrochloric and pure nitric acids (Heller's).

Pour into a test-tube about 1.6 f℥ of pure *hydrochloric acid*, and add to it, drop by drop, just sufficient *urine* to distinctly color it. The two are mixed. Then drop down the side of the test-tube pure *nitric acid*, which will "underlay" the mixture of hydrochloric acid and urine. At the point of contact between the mixture and the colorless nitric acid a handsome "play of colors appears." If the "underlying" nitric acid is now stirred with a glass rod, the set of colors which were superimposed upon one another will appear alongside of each other in the entire mixture, and should be studied by transmitted light.

If the hydrochloric acid, on addition of the biliary urine, is colored *reddish-yellow*, the coloring matter is *bilirubin;* if it is colored *green*, it is *biliverdin.*

XIV. Test for *sugar* by liquor potassa and heat (Moore's).

Add to the urine half its volume of *liquor potassa*. (*Caution.* This *may* give a white, flaky precipitate of the earthy phosphates, which should be removed by filtering.) Now *boil;* this causes, at first, a *yellowish-brown* color, becoming *darker* if much sugar is present, due to glucic, and finally to melassic acid.

XV. Test for *sugar* by subnitrate of bismuth, liquor potassa and heat.

Add to the urine half its volume of *liquor potassa*, and then a little *bismuth subnitrate*, shake and thoroughly *boil;* the presence of sugar reduces the salt and *black metallic bismuth* is deposited, or if but little sugar, a *gray deposit* occurs.

Caution. Albumen must be absent.

XVI. Test for *sugar* by a solution of cupric sulphate, liquor potassa and heat (Trommer's).

Add to the urine a few drops of a solution of *cupric sulphate*, and then its own volume of *liquor potassa*. (*Caution.* On first addition a light greenish precipitate occurs, which, on further addition of the reagent, if sugar or certain other organic matters are present, are dissolved, giving a transparent blue liquid). Now *boil*, and a *yellowish* precipitate of *hydrated cupric suboxide*, occurring at once, denotes the *presence of sugar*.

Caution. Albumen must be absent.

XVII. Quantitative test for *sugar* by *Pavy's* solution, viz :—

℞.

Cupric sulphate, gr. 320
Neutral potassic tartrate, gr. 640
Caustic potash, gr. 1280
Distilled water, f℥ 20
Keep corked.

Take of *Pavy's* solution of *cupric protoxide*, recently prepared (see margin), 200 minims or a multiple of this quantity, and *boil* in a porcelain dish; while boiling, add, minim by minim, from a measured portion of the 24 hours' urine, and it gives a *yellowish* precipitate of *hydrated cupric suboxide*, if sugar be present.

Note *carefully* the gradual disappearance of the *blue color*, and when *completed* (best determined by looking through the margin of the fluid against the white porcelain dish), from the amount of urine used, determine the amount of sugar passed daily. *The quantity of urine containing one grain of sugar being just sufficient to reduce the 200 minims of* the *copper solution.*

XVIII. Quantitative test for *sugar* by fermentation and the specific gravity.

Take *two* measured specimens from the 24 hours' urine, and to *one* add a little *yeast*. Place each specimen in a temperature of 75° to 80° Fah.; in 24 hours, *fermentation* having destroyed the *sugar* in the *one* containing the *yeast*, the difference in the *specific gravity* of the two specimens expresses the number of grains in each ounce of the urine. Approximately.

CONGESTION OF THE KIDNEYS.

Synonym. Catarrhal nephritis.

Definition. An increase in the amount of blood in the vessels of the kidneys; when arterial, it is termed *active congestion;* when venous, *passive congestion;* characterized by pain, frequent desire for urination, the amount of urine being scanty, high-colored, with occasional slight albumen.

Causes. *Active;* by cold; irritating substances eliminated by the kidneys, viz.: turpentine, copaiba, etc.; during the eruptive or continued fevers; injuries over the kidneys. *Passive;* obstructive diseases of the heart or lungs, and pressure of the pregnant uterus.

Pathological Anatomy. The kidneys enlarge and increase in weight: increased redness (the color being bluish if *passive*), with points of vascularity corresponding to the Malpighian bodies, and occasionally minute ecchymoses. The abnormal hyperæmia causes a catarrhal state of the ducts of the pyramids, with shedding of their epithelium.

If mechanical (*passive*) obstruction continues for some time, increase of the connective tissue, with consequent induration and contraction results, or a form of chronic Bright's disease.

Symptoms. *Active; pain* over kidneys and following course of ureters into testicles and penis, *irritable bladder*, almost constant and pressing desire for urination, the *urine scanty, high-colored*, and occasionally bloody, with fibrin, casts and albumen.

If the condition persists, *inflammation* results.

Passive; the kidney changes are masked by the *lung* or *heart* trouble, until *dropsy, scanty, high-colored, albuminous* urine is observed.

Prognosis. *Active;* if recognized and properly treated, favorable.

Passive, controlled by the cause, and if prolonged, terminating in *interstitial nephritis*.

Treatment. Rest of body, dry or wet cups over the loins, *saline purgatives*, warm bath or other mild diaphoretics; if great *irritability of the bladder*, *camphora*, gr. ij–iv, every four hours, combined with *morphinæ sulph.*, gr. $\frac{1}{12}$–$\frac{1}{8}$, or the hypodermatic injection of *morphina*, gr. $\frac{1}{12}$.

ACUTE BRIGHT'S DISEASE.

Synonyms. Acute desquamative nephritis; acute parenchymatous nephritis; acute tubal nephritis.

Definition. An acute inflammation of the epithelium of the uriniferous tubules; characterized by fever, scanty, high-colored or smoky urine, dropsy, with more or less constant nervous phenomena, the result of uræmia.

Causes. The young more liable than the aged; cold and exposure; scarlatina; persistent use of irritants, viz: turpentine, cantharides, etc.

Pathological Anatomy. The kidneys are greatly swollen, engorged, more vascular, of red color; in the second stage the organ remains large, irregularly red, especially the cortex; the tubules are engorged and filled with epithelium, blood corpuscles and fibrin. The capsule is easily detached, and is more opaque than normal.

If favorable termination, the swelling lessens, the vascularity diminishes, the tubules returning to a normal condition.

Symptoms. Usually begins suddenly. *Fever*, with *nausea* and *violent* and *persistent vomiting*, *pain* over kidneys, following ureters; *skin* harsh and dry; *pulse* quick, tense and full. Soon *dropsy* appears, the eyelids and face becoming puffy and swollen, followed by general œdema of the extremities, scrotum and abdominal walls.

The *urine* is scanty, smoky (like beef washings) in color, due to the presence of *blood*. *Albumen* is present in large quantities, and the microscope reveals *casts* of the uriniferous tubules, blood corpuscles, uric acid crystals and epithelium.

Duration from one to four weeks.

Complications. *Pericarditis*, *pleuritis* and *peritonitis*, from retention and decomposition of urea in blood. Also marked nervous phenomena, from the same cause, termed *uræmia*, in which have rapidly recurring *convulsions or delirium*, terminating in *stupor*, *coma* and *death*, unless speedily checked.

Prognosis. Favorable. Majority of cases recover under prompt treatment. Rarely passes into chronic Bright's disease. *Uræmic* symptoms add to the gravity of the prognosis.

Diagnosis. The history, fever, scanty smoky albuminous urine, with dropsy beginning in the face, should prevent any error.

Albuminuria may be confounded, on account of the presence of albumen in the urine, but lacks the clinical history, usually occurring in the course of some constitutional affection, viz.: diphtheria, cholera, etc.

Treatment. Absolute *rest in bed*. *Milk diet*, or if much depression, also weak *animal broths* and *oysters*. Drink freely of *water*, but neither tea, coffee nor stimulants. *Counter-irritation* over the kidneys by dry or wet cups, and poultices of *digitalis*.

Free *purgation* by *pulv. jalapæ comp.*, ʒj, in water, before breakfast.

Diaphoresis by warm baths, or an infusion of *jaboranda* leaves (ʒij to *aqua*, Oj), wineglassful every four hours, or *vinum ipecacuanhæ*, gtt. j–ij, every half hour.

Diuresis, by—

℞. Potass. acetas..... gr. x–xx
Infus. digital..... fʒij
Infus juniperi..... fʒij M.
Every four hours.

For *uræmic* convulsions, *morphina*, gr. ¼–½, hypodermatically, repeated if necessary; *venesection*, or inhalation of *chloroform*, or *chloral*, or *potassii bromid.*, per rectum, and rapid and free purgation by *oleum tiglii*, or *elaterium;* also acting on the skin by *warm baths* or *pilocarpin*, gr. $\frac{1}{12}$–$\frac{1}{8}$, hypodermatically.

As soon as the blood disappears from the urine, a course of *ferrum*, in the shape of *Basham's mixture*, until albumen disappears and health is restored. The following is the formula of Basham's mixture:—

℞. Liq. ammon. acetat..... fʒvj
Acid acetic..... ʒiij
Tinct. ferri chlor..... fʒv
Alcoholis..... ʒij
Syrup..... fʒiv
Aquæ..... fʒiv. M.
Sig.—Dose fʒj–fʒj.

CHRONIC PARENCHYMATOUS NEPHRITIS.

Synonyms. Chronic Bright's disease; chronic tubal nephritis; chronic albuminuria; large white kidney.

Definition. A chronic inflammation of the cortical and tubular tissues of the kidneys; characterized by albuminous urine, dropsy, increasing anæmia, with attacks of *uræmia*.

Causes. Occasionally follows the acute form; syphilis; chronic malaria; chronic alcoholism; chronic mercurialism; lead poisoning; protracted suppuration. It is a disease of the young, rarely occurring after forty.

Pathological Anatomy. A large white or yellowish white, smooth kidney, often twice the normal size. The capsule is nowhere adherent to the organ. Upon section, considerable tumefaction of the cortical substance and the rarity of vascular striæ are recognized. The medullary substance shows no appreciable alteration, its color being normal. The convoluted tubes are irregularly dilated and thickened, and filled with broken-down, granulated epithelium and fibrinous casts. In pronounced cases there is fatty degeneration of the tubular epithelium.

Symptoms. Onset gradual and insidious, and seldom seen until the appearance of *dropsy*, beginning under the eyes and in the face, extending all over the body, causing *dyspnœa*, from *ascites* or *hydrothorax*. The *urine* scanty, high-colored, *albuminous*, and under microscope shows *tube casts*, granular epithelium, and if fatty degeneration occurs, *fatty tube* casts and oil globules.

Anæmia is pronounced, from the large waste of albumen. *Gastro-intestinal* disorders and vague *neuralgic pains* are common occurrences. *Bronchial catarrh*, with slight *œdema of the larynx*, causing *husky voice*, are frequent complications. *Uræmic* symptoms occur, and especially *uræmic asthma* (renal asthma).

Complications. Pneumonitis, pleuritis, pericarditis, and peritonitis.

Prognosis. Not unfavorable, unless urine contains persistently large numbers of fatty tube casts and oil globules. Relapses are frequent, but many complete recoveries are recorded.

Treatment. Regulated dietary, viz: milk, eggs, animal broths, etc. Rest, even in bed, for days at a time. Alcoholic stimulants contra-indicated. Promote free action of the skin by *warm bath*, *friction*, *jaboranda* and other *diaphoretics*.

For *dropsy*, purgatives, such as *pulv. jalap. comp.*, *hydragogue cathartics*

and alkaline mineral waters. If there is great distention of the cavities interfering with respiration, the *aspirator* should be used. Puncture of the skin may be necessary at times, and is well accomplished with an ordinary cambric needle.

For the disease and the condition of the blood, *ferrum* in some form does good, to wit: *Basham's mixture, tinct.* or *ferri chloridi* with *liq. ammonii acetat.*, or the *syrup ferri iodidi.*

To check the waste of albumen, a difficult matter, the following remedies have been used with more or less success: *ergota, quinina, acidum gallicum, acidum benzoicum, tinct. cantharidis, potassii iodidum,* and lastly, the Russia remedy, *blatta orientalis* (cockroach).

INTERSTITIAL NEPHRITIS.

Synonyms. Chronic Bright's disease; sclerosis of the kidneys; contracted kidneys; small red kidney; gouty kidney.

Definition. An inflammation of the intervening connective tissue of the kidney, chronic in its progress, resulting in an induration or hardening, with contraction of the organ; characterized by frequent passing of large amounts of pale, albuminous urine, of low specific gravity, disorders of the gastro-intestinal and nervous systems, and a strong tendency to cardiac hypertrophy and changes in the vessels.

Causes. A disease of middle life, from forty to sixty years. Gout a very common cause; lead cachexia; syphilis; alcoholism; alterations in the renal ganglionic centres (DaCosta and Longstreth).

Pathological Anatomy. The *kidneys* are reduced in size. The *capsule* is thickened, opaque and adherent. The *surface* of the kidney is granular, with cysts of various sizes, of transparent color, irregularly over the surface. On section the *tissue* of the kidney is tough and resistant. The *cortical* portion is thin, from atrophy, being only a line or two in thickness. The *connective tissue* is greatly thickened, compressing the tubules into mere threads, the *glomeruli* being grouped together in bunches, owing to the wasting of the intermediate tubes. The *color* varies, from a darkish-brown to a yellowish-gray, according to the amount of blood in the organ.

The left side of the *heart* is hypertrophied, and there is also hypertrophy of the muscular fibre of the *arterioles* throughout the body; if the case is protracted the hypertrophied tissues undergo fatty degeneration.

The *retina* undergoes atrophy, termed *retinitis albuminuria.*

The "*ganglionic centres*" undergo fatty degeneration and atrophy (DaCosta and Longstreth).

Apoplexy is a frequent termination of interstitial nephritis, the rupture of the cerebral vessel suggesting it a disease of degeneration.

Symptoms. Onset insidious and often marked alterations in the kidneys, heart and vessels before recognized. Any of the following symptoms may first attract attention, to wit: *frequent micturition, increased* amount of *urine, pale color*, containing small amount of *albumen*, which may be absent for days, occasional *epithelial cells* and *hyaline casts.* No dropsy, but a little *puffiness* and *œdema* of *conjunctiva*—the Bright's eye. *Disorders of vision. Forcible cardiac action* with *high arterial tension.* And any of the following symptoms, the result of *uræmia:* Persistent *dyspepsia*, occasional *vomiting*, regardless of food; *headache, vertigo* and *stupor*, or *drowsiness;* violent *itching* of the skin; *tremors, convulsions, epileptic* seizures, or *apoplectic attacks.*

The body weight declines, the skin is dry and scurfy, the strength fails, with shortness of breath on exertion.

The *termination* is usually by convulsions, coma and death.

Complications. *Bronchitis; pneumonitis; pleuritis; pericarditis.*

Prognosis. Pursues a very chronic course; cases recorded under observation eleven years; but the termination is always fatal.

Diagnosis. Differs from *parenchymatous nephritis* in the following: large quantity of urine, clear, and low specific gravity, and small amount of albumen, with few hyaline casts; the hypertrophied heart and tense arteries and marked disorders of vision.

Treatment. Regulated diet. Diaphoresis. Diuretics. Avoid alcoholic stimulants. As near absolute rest as patient's general health will permit.

To prevent the growth of the connective tissue the following remedies are recommended, to wit: *potassii iodidum, hydrargyri corrosiv. chlor.*, gr. $\frac{1}{20}$, *aurii et sodii chloridi, ferri iodidum* and *arsenicum.*

For *uræmia*, if patient is conscious, *purgatives, diaphoretics* and *diuretics.* If unconscious, *morphina* hypodermatically or *chloroform* inhalations.

AMYLOID KIDNEY.

Synonyms. Chronic Bright's disease; waxy kidney; lardaceous kidney.

Definition. A peculiar infiltration into, or a degeneration of, the structure of the kidney, by the deposit of an albuminoid material, having a superficial resemblance to starch granules. Similar changes occur in the liver, spleen, intestines and other organs.

Causes. The chief cause is prolonged suppuration, especially of the bones; coxalgia; syphilis; cancer.

Pathological Anatomy. The kidney is uniformly enlarged. It presents a pale, glistening, translucent appearance, and has a doughy consistence. On section, the surface is homogeneous, anæmic and whitish. The deposit occurs along the renal vessels and in the vascular tufts of the glomeruli, progressing until all parts of the organ are infiltrated. When the organ is thus infiltrated the proper structure undergoes an atrophic degeneration, from pressure.

The reaction with iodine and sulphuric acid affords a certain test of the *amyloid* deposit. Brush over a section of the affected kidney a solution of iodine with iodide of potassium in water, when a mahogany color will be produced, and if diluted sulphuric acid is now added, a violet or bluish tint results. A very pretty reaction is to take a one per cent. solution of anilin violet, which strikes a red or pink color with the amyloid material, while the unaltered tissues are stained blue, making a beautiful contrast.

Similar changes occur in other organs of the body. With the amyloid change may be associated either parenchymatous or interstitial nephritis.

Symptoms. Associated with *wasting* are *œdema* of the lower extremities and *ascites*, with *increased flow of urine*, pale, watery and of low specific gravity, containing *albumen* and *hyaline casts*, which are transparent. If the amyloid change is associated with other forms of renal change, the urine will show the characteristics of such condition. A profuse, watery and persistent *diarrhœa* adds to the suffering caused by amyloid changes in the intestinal canal.

Prognosis. Controlled by the suppurating disease with which it is associated; the termination, when the amyloid change is fully developed, is unfavorable, death occurring within a few months, or under favorable conditions, extending to one or more years.

Diagnosis. Differs from *parenchymatous nephritis* in its clinical history, and the fact of its always being associated with a suppurating disease.

From *interstitial nephritis*, in its history, character of urine, absence of uræmia, cardiac hypertrophy, changes in vessels, and the fact of its association with suppurating diseases and similar changes in other organs.

Treatment. Sustaining and symptomatic in character. Generous diet, persistent use of *ferrum* and *oleum morrhuæ*.

If caused by syphilis, a thorough course of *potassii iodidum* and *ferri iodidum* with *oleum morrhuæ*.

PYELITIS.

Synonyms. Suppurative nephritis; pyelo-nephritis.

Definition. An acute catarrhal inflammation of the pelvis of the kidney; the term *pyelo-nephritis* is used when suppurative inflammation is superadded to the pelvic inflammation. The disease is characterized by lumbar pains, irritability of the bladder, the urine neutral or alkaline in reaction, and milky in appearance; if *pyelo-nephritis* occur, symptoms of hectic fever and exhaustion are added.

Causes. Cold or exposure; cystitis; obstruction of the ureters by renal calculi; pressure of tumor, etc.

Pathological Anatomy. The inflammation is *catarrhal;* it is characterized by injection of the mucous membrane of the pelvis of the kidney, with slight extravasations of blood; relaxation and softening, shedding of the epithelium, and the subsequent discharge of mucus and pus. If the morbid process has existed for some time, the kidneys, one or both, are in a process of suppuration, they are enlarged, deeply congested, except where suppuration is proceeding, where they are of a yellowish-white color—*pyelo-nephritis*. Pus is constantly forming, and if there is no obstruction, flows away with the urine; should there be an impediment to its escape, pus accumulates in the pelvis of the kidney, which distends it, giving rise to the condition known as *pyo-nephrosis*. The pressure caused by the obstruction finally leads to destruction of the entire organ, a mere sac, or *renal cyst*, remaining.

Symptoms. If caused by *cystitis*, symptoms of this condition precede; if from *renal calculi*, its characteristic symptoms precede those of pyelitis.

Begins by *chilliness, feverishness, lumbar pains* following course of ureters, *frequent micturition*, the *urine milky* in appearance when voided, *acid* or *neutral* reaction, and depositing a copious sediment, whitish or yellowish white in color, containing only a small amount of albumen, not more than is proper to *pus*.

If *pyelo-nephritis* follow, symptoms of pyæmia supervene, to wit; *fever*, typhoid in character, low, muttering *delirium*, *subsultus tendinum*, *stupor*, decline in strength, and loss of flesh, with perhaps a *tumor* in lumbar region.

If both kidneys are affected *uræmic* symptoms are frequent.

Prognosis. Simple cases, where no obstruction to flow of pus, *recover* in a week to ten days. If obstruction of the ureter, the prognosis grave. Suppurative cases unfavorable.

Diagnosis. From *cystitis*, by history, lumbar pains and *acidity* of purulent urine, the urine in cystitis being always *alkaline*.

Peri-nephritis, a disease of loose tissue, around about the kidneys, terminating in abscess, giving lumbar pain, increased by motion or pressure, hectic fever, sense of fluctuation over kidneys, the *urine remaining normal*.

Treatment. Rest in bed. Milk diet. Free use of water to dilute the urine, and free diaphoresis. *Quinina* to keep down temperature, prevent formation of pus and maintain the powers of life.

To change the character of the secretion, Prof. DaCosta strongly recommends *pix liquida;* other remedies are *oleum santali*, *copaiba*, *eucalyptol*, *terebinthina* and *cubeba*.

If *abscess* result, aspiration, *quinina* and stimulants.

RENAL CALCULI.

Synonyms. Nephro-lithiasis; gravel; renal colic.

Definition. *Renal calculi* are concretions formed by precipitation of certain substances from the urine, around some body or substance acting as a nucleus.

Their presence may not be recognized until one or more attempt to pass along the ureters, when an attack of *renal colic* results; or, by irritation, *pyelitis* is produced; or, more rarely, they are voided by the urine without exciting any symptoms.

By *gravel* is meant very small concretions, which are often passed by the urine in large numbers.

Causes. Occur at all ages; frequent before the fifth year and from five to fifteen. Males are more liable than females. A special liability seems to exist in some families, but the precise etiology of calculi is not yet determined.

Varieties. 1. *Uric acid*, as calculi and gravel, and especially associated with the gouty diathesis.

2. *Urates*, chiefly urate of ammonia; nearly always in childhood.

3. *Oxalate of lime* or mulberry calculus; characterized by hardness, roughness and very dark color.

4. *Phosphatic calculi* form as frequently in the bladder as in the kidney, and present a chalky or earthy appearance.

5. *Alternating calculi*, consisting of alternate layers of two or more primary deposits.

Anatomical Characters. In structure, a urinary calculus usually consists of a *central nucleus*, surrounded by the *body*, and outside of all there may be a phosphatic *crust*. The nucleus may or may not be of the same material as the rest of the stone, sometimes being a foreign body, mucus or blood.

A section generally shows a *stratified* arrangement, or it may be partly or completely *radiated*.

Symptoms. The clinical signs of renal calculi are those consequent on the results of their presence, to wit: *hemorrhage*, *renal congestion*, *inflammation*, terminating in *abscess*, *pyelitis* or *pyelo-nephritis*, *cystitis* or *renal colic*.

The symptoms of *renal colic* begin abruptly, by severe, agonizing *pain* in the lumbar region, following the ureters into the corresponding groin and thigh. *Pain* and *retraction* of corresponding testicle, also of glans penis. *Face pale* and *features pinched*, the surface cold and damp. Irritability of the bladder, the urine passed in drops containing some blood. So severe is the pain at times that the patient may faint or pass into unconsciousness with a general convulsion. If both ureters are obstructed *uræmic symptoms* will arise.

The paroxysm usually terminates suddenly after some minutes or hours, the stone escaping into the bladder.

Prognosis. Renal calculus is attended with many dangers. It may produce extensive disorganization of the kidneys, or its passage along the ureter may prove fatal. If the stone is very large, or if more than one, the prognosis is more grave. Calculus is a disease very apt to recur. Renal sand (*gravel*) and small concretions may, after more or less delay, be voided with the urine.

Treatment. An attack of *renal colic* is best relieved by a hypodermatic injection of *morphina* and a warm bath or a suppository of *ext opii*, gr. j, *ext. bellaëonnae alco.*, gr. ss., repeated if needed.

For attacks of *gravel*, *liquor potassii citratis*, ʃ ℥ ss., every three hours, and if much *vesical irritability* adding *tinct. opii camph.*, ʃ ʒ ss–j.

GENERAL DISEASES.

DIPHTHERIA.

Synonyms. Putrid sore throat; malignant ulcerous sore throat; malignant quinsy; membranous angina.

Definition. An acute specific constitutional disease, both *epidemic* and *contagious*, beginning by an affection of the throat, and characterized by a local exudation and glandular enlargements; attended with great prostration of the vital powers and albuminuria, and having for its sequelæ various paralyses.

Causes. *A specific poison*, the character of which is unknown. It is preëminently a disease of childhood. Rare among adults; very rare in old age. It is apt to recur in those who have once been affected. All conditions of bad hygiene increase its virulence and favor its diffusion, although the chief cause of its spread is *contagion*.

The poison exists in the exudations and secretions of the fauces and the breath, and floats in the atmosphere at a considerable distance from the original source.

The theory of "No bacteria, no diphtheria," is not entirely proven.

The *period of incubation* is from three to five days.

Pathological Anatomy. The *diphtheritic* inflammation differs from either the *croupous* or *catarrhal* form, in that the exudation is not only *upon*, but also *within*, the substance of the mucous membrane. At first there is *redness*, which may begin in any part of the throat, associated with *swelling* and *increased secretion* of viscid mucus. The redness spreads over the entire mucous surface, when the *exudation* makes its appearance. The deposit may commence from one or several points, such as on one tonsil, the soft palate, or the back of the fauces, which, however, speedily extend and coalesce, forming extensive patches, or cover uniformly the entire surface.

The patches are of variable thickness, which is increased by successive layers being formed underneath.

The *color* is usually gray, white or slightly yellow, but may be brownish or blackish, the *consistence* ranging from "cream to wash leather."

On removing the membrane, which is accomplished with more or less difficulty, a raw, bleeding surface is exposed; at times an ulcer, which is speedily covered with a fresh deposit.

If the exudation separates itself, it is either not renewed at all or only in thinner films.

Occasionally considerable ulceration or sloughing of the soft palate, uvula, or tonsils result, or abscesses may form.

The exudation or membrane, examined by the microscope, is composed of fibrin, pus corpuscles, epithelial granular cells and bacteria.

If the *larynx*, *trachea* or *nasal* mucous membranes participate in the disease, the *croupous* and not the *diphtheritic* form of inflammation occurs.

The *lymphatic glands* of the neck, whose vessels originate in the faucial tissues, are enlarged and inflamed, and contain large numbers of *bacteria*, probably originating as the result of decomposition.

The muscular tissue of the *heart* becomes soft, is easily torn, and its fibrillæ are far advanced in fatty degeneration. Ulcerative endocarditis has been frequently observed.

The *kidneys* undergo a granular degeneration in severe attacks.

The *blood* undergoes alteration, being black and fluid.

Symptoms. Following the law of *contagious* diseases, the symptoms vary in intensity in different cases, the prominent symptoms being often disproportionate to the gravity of the attack.

The *invasion* may be *mild*, with *rigors* succeeded by moderate *fever*, *headache*, *languor*, *loss of appetite*, *stiffness of the neck*, *tenderness* about the *angles of the jaw*, or *slight soreness of the throat*.

In other cases the *invasion* is more *abrupt* and *severe*, with *chilliness* followed by great *febrile* reaction, 103° to 105°, F., *pain in the ear*, *aching of the limbs*, *loss of strength*, *painful deglutition* and *swelling of the neck*, compelling the patient to take to bed from the onset.

The *appetite* is poor, the *tongue* slightly coated, sometimes more or less exudation appearing upon it, the *bowels* being either regular or slightly relaxed. The *pulse*, at first full and strong, soon becomes either frequent or slow, but *compressible*. The *urine* is scanty, high colored, and contains *albumen*.

The *local* symptoms in the majority of cases are associated with the throat. The patient complains of a frequent and persistent desire to hawk, in order to clear the throat. On *inspection* the fauces are seen *red* and *swollen*, and more or less covered with the diphtheritic *exudation;* sometimes the *tonsils* and *uvula* are greatly *swollen* and spotted with exudation. In bad cases, more or less *ulceration* or *sloughing* may be observed. Not unfrequently fragments of exudation, the *false membrane*, are expectorated, with particles of the ulcerated tissues, having an *offensive odor*

which is transmitted to the breath. The *lymphatic glands* of the neck are *enlarged* and *tender*, and in severe cases the tissues of the neck are greatly tumefied.

Extension to the *nasal cavities* causes a *sanious* and *offensive* discharge from the nose, with attacks of *epistaxis*.

Extension to the *larynx* is indicated by *hoarseness* or *complete loss of voice*, *croupy cough* and obstructive *dyspnœa*, which often becomes urgent, the breathing being *noisy* and *stridulous*, and subject to paroxysmal exacerbations. If the inflammation extends to the *bronchi*, the breathing becomes still more embarrassed.

Duration. Ranges from two to fourteen days, an average being about nine days, although complications and sequelæ may prolong its course.

Relapses are not uncommon.

Sequelæ. Those who recover from a severe attack remain often for weeks with a *pale* and *cachectic* appearance, due to the profound blood alteration.

Paralysis is a common sequelæ, following the mild as often as the severe attacks. Usually not occurring until the patient seems fully convalescent.

Pharyngeal paralysis is the most common, causing difficulty or inability of *deglutition*, fluids regurgitating through the nose.

Cardiac paralysis is not unfrequent, the pulsations descending to 60, 50, 40, and in a case seen by the author, to 20 per minute.

Diphtheritic paralysis may affect the motor muscles of the eye, causing *strabismus ;* the muscles of one side, *hemiplegia ;* of the legs, *paraplegia ;* and of the bladder, leading to *retention of urine*, or difficulty in passing it.

Sensation is also *diminished* in the paralyzed parts.

Prognosis. Always grave, but more so in children than in adults. Its gravity, in the majority of cases, is proportionate to the local symptoms. The average mortality is about *ten per cent.*

Favorable indications are, moderate fever, strength slightly impaired, a good constitution, and moderate exudation.

Unfavorable indications are, great depression, spreading exudation, great swelling of the cervical glands, large amount of albumen, extension to larynx and nasal mucous membranes, hemorrhages from the fauces and nose, and an epidemic character.

Diagnosis. From *follicular ulceration of the tonsils*, which is frequently termed diphtheria, by the slight or absent systemic symptoms, the

ulcerated condition being limited to the tonsils, often but one, and the absence of glandular enlargement and following palsies.

From *pharyngitis*, by the absence of exudation and loss of faucial tissue, and constitutional symptoms.

From *membranous croup*, by the difference in the constitutional symptoms; in diphtheria of the larynx the depression is markedly that of blood alteration, while in croup all symptoms of depression are in proportion to the obstruction to respiration. In croup the pharynx contains no membrane, and is but slightly inflamed, the reverse obtaining in diphtheria. Again, in croup the laryngeal symptoms are from the onset, while in laryngeal diphtheria the pharyngeal symptoms almost always precede.

From *scarlatina*, by the presence of the eruption and the absence of membrane in the fauces.

Treatment. *No specific.* The blood being more or less altered, it follows that *sustaining* measures must be resorted to in *all cases*.

The *diet* must be of the most nutritious character from the onset, such as milk, eggs, broths, oysters, etc., at *intervals* of every *two or three hours*. If deglutition is too painful, resort must be had to nutritious *enemata*.

Stimulants must be used boldly from the onset, guiding the dose by the effect; usually, a child of two years requires from *thirty* to *sixty minims* of *spiritus vini gallici* every two or three hours; an adult, from *two* to *four drachms* every three hours.

Ferrum and *potassii chloras*, in *full doses*, frequently repeated, have seemed, when begun early in the attack, to modify the course of the malady, and they have the additional advantage of locally acting upon the throat as they are swallowed. A good formula is—

℞. Tinct. ferri chlor..... gtt. v–x–xv
Potassii chlor..... gr. iij–v
Glycerinæ..... ♏ xv
Syr. zingib.....ad..... ʃʒ j–ij. M.

Sig.—In water every three hours, for a child of two or three years.

The efficacy of the above is greatly enhanced, in the author's experience, by the addition to each dose of *tinct. belladonnæ*, gtt. j–v.

Quinina, gr. xvj–xxiv per day for young adult, and gr. v–x for child, should be used throughout the disease.

Calomel in small doses, combined with *sodii bicarbonas* every hour until the *breath becomes fetid*, is beneficial, and especially in cases showing a tendency to spread toward the larynx. Indeed, a *tolerance* to calomel seems to exist in diphtheria.

Hydrarg. chlor. corros., gr. $\frac{1}{8}$-$\frac{1}{4}$, repeated every second or third hour, also acts well in many cases.

Locally. *Cleanliness* of the fauces is of the utmost importance, and if a *non-irritating disinfectant* is added, its value is enhanced. Dr. Bartholow "has seen excellent results from the frequent application of a solution of *acidum lacticum*, strong enough to taste sour, by means of a mop." The following, used as a *gargle*, or applied by mop, is useful:—

℞. Acid. salicyl..... gr. xx
Glycerinæ..... f℥j
Aquæ destil..... f℥iij. M.

Or—

℞. Potass. chloras..... ℥iv
Acid carbol..... gr. ij-iv
Tinct. myrrh..... ℥j
Inf. cinchonæ..... ℥ij. M.

Or—

℞. Thymol..... gr. x–xx
Glycerinæ..... ℥j–ij
Aquæ ..... ℥j–ij M.

Inhalations of steam and hot water, and allowing patient to suck pellets of ice, give relief. Sponges dipped in hot water and applied to the angles of the jaw are beneficial.

For *laryngeal diphtheria* same general treatment, especially the *mercurial*, with *inhalations* of lime by slaking freshly burned lime in a vessel and directing the vapor to the child by a newspaper, or some similar contrivance, or using three parts of *liquor calcis* and one part of *glycerin*, in an *atomizer*, every half hour or hour. If these means fail, resort must be had to *tracheotomy*, which has succeeded in many desperate cases.

For *nasal diphtheria* the same general treatment, and syringing the nose every two or three hours with a weak solution *potassii chloras*, or *acidum carbolicum*, or the following:—

℞. Sodii sulphit..... ℥iij
Glycerinæ..... f℥ij
Aquæ ..... f℥iv. M.

For *the paralysis*, *strychnina* and *ferrum* internally, or *strychnina* hypodermatically, with the *galvanic current* locally.

ACUTE ARTICULAR RHEUMATISM.

Synonyms. Rheumatic fever; inflammatory rheumatism.

Definition. A constitutional disease, characterized by fever, inflammation in and around the joints, occurring in succession, and a great tendency to inflammation of either the endocardium or pericardium.

Causes. The *predisposing* causes are inherited tendency, scarlatina, and the puerperal state.

The *exciting* causes, exposure to cold and chilling of the body. Rheumatism rarely occurs before seven or after fifty years. The liability to the disease is increased by having had an attack.

Pathological Anatomy. The *blood* contains an excess of *lactic acid*. The *joints* bear the brunt of the attack; the synovial membrane is reddened, the vascularity of the synovial fringes is increased, so with the synovial fluid, which is thinner, of a reddish color, containing some gelatinous coagula of fibrin, and under the microscope nucleated cells, ordinary pus cells being rarely seen.

The swelling visible about the affected part depends mostly on inflammatory œdema of the connective tissue around the joint.

The *pain* is probably due, in all cases, to stretching of and pressure on the elements of the tissue by the dilated capillaries and the inflammatory œdema. For the changes which ensue when the endo- or peri-cardium is attacked, the reader is referred to the articles on those diseases.

Symptoms. Begins suddenly, generally at night, with a *chill* or chilliness, *pain* and *stiffness in the joints*, loss of appetite, at times, nausea and vomiting, followed by *fever*, the temperature soon reaching 102°, F., to 104°, in rare cases 108° to 110° (*the hyperpyrexia*), the *pulse* seldom exceeding 95, *great thirst*, *profuse acid sweats*, scanty, *high colored*, *acid urine*, at times showing traces of albumen, the *bowels constipated*. The *fever* continues throughout the attack, showing marked remissions. Delirium is absent, except the *hyperpyrexia* occur. *Sleep* is prevented by *pain* and profuse *perspirations*. The strength is moderately well preserved.

The *skin* is often covered with an eruption of *miliaria rubra*, *red papulæ* and *miliaria alba*, the result of irritation at the orifices of the perspiratory glands, from excessive sweating.

The *local* phenomena are *pain*, *tenderness*, *increased heat*, *swelling* and *redness* of one or more joints; if but one joint, it is termed *monoarthritis*, if more than one, *polyarthritis*. *Pain* is aggravated by motion and *pressure*. *Swelling* is most apparent in those joints not covered with

muscle, viz: knee, wrist, elbow, ankle, and the hands and feet, and is proportionate to the acuteness of the attack. The inflammation may abruptly cease at one or more joints, and as suddenly attack others.

The disease is extremely irregular as regards the number of joints affected, although the local manifestations are controlled by an important pathological law, viz: *the law of parallelism*. Corresponding joints are often affected together, and when not, the different affected joints are either on one side of the body, or those on both sides which are analogous, viz: knee, elbow, wrist, ankle, hip and shoulder, are attacked together.

Complications. *Pericarditis*, *endocarditis*, *myocarditis*, *cerebral endarteritis*, bronchitis, pneumonitis and pleuritis.

Duration. The duration of acute rheumatism is governed entirely by the presence or absence of complications. Uncomplicated cases recover in from *thirteen* to *twenty-one* days, although they may be prolonged to five or six weeks.

Prognosis. Recovery the rule in uncomplicated cases, the mortality being about three per cent. When death occurs it usually depends upon hyperpyrexia, cardiac complication, or cerebral endarteritis.

Diagnosis. A typical case cannot be mistaken for any other disease, but cases running a *subacute* course may be mistaken for acute rheumatoid arthritis, gonorrheal rheumatism, or pyæmia.

Acute rheumatoid arthritis attacks one joint at a time and becomes permanent, has slight if any fever, no sweats or cardiac lesions.

Gonorrhœal rheumatism is associated with a gleety discharge, attacks either the ankle or wrist only, is slowly influenced by treatment, and lacks the febrile phenomena.

Pyæmia is usually manifested at a single joint at the time, and is followed by suppuration and all the symptoms of hectic fever.

Treatment. Rest in bed, whether the pain forces it or not, is imperative. Next, keep the patient *warm*, for which purpose he should be kept in *blankets*—no sheets, and wear woolen garments. The *diet* must be easily digested food, milk being the best.

Locally, the affected joints should be wrapped in cotton-wool or flannel, saturated with a solution of *tinct. opii*, one part, and *liq. plumb. subacetat. dil.*, two parts. Dr. Bartholow finds the application of *blisters* an effective method. He says, "I have small blisters, the size of a silver dollar, placed around the joint, leaving an interval between for succeeding applications. It is by no means so painful and disagreeable as it appears at first

sight. The blisters remarkably relieve the pain, bring about a more alkaline condition of the blood, and render the urine less acid, or bring it to neutral, or even to alkaline."

Strong and vigorous patients do best with *acidum salicylicum* or the *salicylates* in large and frequently repeated doses, viz :—

℞. Acid. salicyl..... gr. xx
Liq. ammon. acetat..... f℥iss
Spts. ætheris. nitrosi..... ♏xv
Syr. simplicis..... ♏xv

Every three hours, well diluted.

Or,

℞. Sodii salicyl..... gr. xx
Spts. lavend. comp..... ♏xv
Glycerinæ..... ℥ss
Aquæ.....ad..... f℥ss

Every three hours, well diluted.

If benefit follows, the evidence is quickly afforded in relief of pain and decline of temperature and swelling. If, therefore, after three or four days' use of the salicylates or acidum salicylicum, as above recommended, signs of improvement are wanting, the treatment had better be changed for the *alkaline* treatment, which consists in the administration of *an ounce and a half* of the alkaline carbonates, either alone or with a vegetable acid, each twenty-four hours, until the *urine becomes neutral* or *alkaline*, when the quantity is reduced to an amount sufficient to maintain alkaline urine, viz:—

℞. Potass. bicarb..... ℥ij
Acid tartaric..... gr. xv

Dissolved in a glass of water and drank effervescing every three hours.

Or,

℞. Potass. bicarb..... ℥ij
Succi limonis..... ℥j
Aquæ cinnamomi.....ad..... f℥ss. M.

Sig.—In water every three hours.

After the more *acute* symptoms are passed, change either of the above for *tinct. ferri chlor.*, gtt. xx every four hours, well diluted.

Pale, feeble and anæmic patients, or attacks following scarlatina, etc., are most favorably influenced with

℞. Tinct. ferri chlor..... gtt. xx–xxx
Syr. limonis..... gtt. xx
Aquæ..... f℥j. M.

Sig.—Every four hours, in glass of water.

Prof. DaCosta reports a lessened proportion of *cardiac complications* with *ammonii bromidum*, gr. xv–xx, every four hours.

Subacute attacks and lingering cases are favorably influenced by

℞. Lithii citras..... ..... gr. xxx
Syr. zingib..... ʒj
Aq. lauro-ccrasi..... ..... ʒj M.

Every four hours.

Pain and *restlessness* should be controlled by *opium* in some form, in full doses, or *atropina*, gr. $\frac{1}{80}$, hypodermatically.

For the *hyperpyrexia*, *quinina*, gr. xxx–lx repeated p. r. n., with the *cold bath* or *wet-pack*.

The complications are to be treated according to their character.

MUSCULAR RHEUMATISM.

Synonyms. According to location, viz.: lumbago; torticollis; pleurodynia, etc.

Definition. An affection of the voluntary muscles, inflammatory in character, either *acute* or *chronic;* characterized by pain, tenderness, and stiffness of the affected muscles. It is never complicated with cardiac disease.

Cause. A disease of adult life. One attack predisposes to another. Almost always due to cold and damp, or direct draught of cold air. Gout increases the tendency to attacks.

Pathological Anatomy. The true nature of muscular rheumatism is not yet determined. Virchow suggests a "hyperæmia of, and. scanty serous exudation between, the muscular striæ, and in chronic cases inflammatory proliferation of the connective tissue."

Symptoms. The *first* attack is generally *acute*. Onset rather sudden, with *pain* in affected muscles, slight *tenderness*, and considerable *stiffness*, with *difficulty of movement*, by which also the pain is increased.

The suffering may be severe and constant, or only on motion. *Spasm* of the affected muscles may occur. *Objective* symptoms are wanting, except it is evident the patient keeps the affected muscles as quiet as possible. Fever is absent. The pain may prevent sleep.

Duration, *acute* form, about one week. *Chronic* returns frequently, and finally becomes constant and aggravated when the weather is damp.

Varieties. It may affect any or all of the voluntary muscles, but its most frequent and important varieties are:—

1. *Cephalodynia.* Situated in the occipito-frontal muscle. Distinguished from *neuralgia* of the trifacial, or occipital nerve, by pain on both sides of the head, excited or aggravated by movements of the muscle, and by absence of disseminated points of tenderness.

The muscles of the eye may be affected when movements of that organ excite pain. If the temporal and masseter muscles are attacked, mastication excites pain.

2. *Torticollis.* Wry-neck, or stiff-neck. Situated in the sterno-mastoid muscles. Generally limited to one side of the neck, towards which side the head is twisted, great pain being excited on attempting to turn to the opposite side. Rheumatism of the muscle of the back of the neck, *cervicodynia*, may be mistaken for occipital neuralgia.

3. *Pleurodynia.* Situated in the thoracic muscles, and may be mistaken for pleuritis, or intercostal neuralgia, from which it is differentiated by the absence of the diagnostic features of each. Pain is excited by forced breathing, coughing and sneezing.

4. *Lumbodynia* or *lumbago.* Situated in the mass of muscles and fasciæ which occupy the lumbar region. Most common variety. Usually affects both sides. It may set in rapidly and become very severe. Motion of any kind aggravates the pain, often becoming sharp or stabbing in character. It is sometimes complicated with *acute sciatica*, when the suffering is agonizing.

Prognosis. Difficult to eradicate, and in chronic cases to ameliorate; but is not dangerous to life. Death never results.

Diagnosis. The different varieties may be mistaken for any of the following ailments, to wit: trifacial, occipital or intercostal neuralgia, pains of progressive muscular atrophy, syphilis, metallic poisons, or painful affections of the loins, arising from calculi or gravel in the kidney.

A careful examination of the history is usually sufficient to arrive at a correct diagnosis.

Treatment. *Rest* is the first indication. This is accomplished in *pleurodynia* by firmly strapping the affected side with broad strips of plaster, extending from mid-spine to mid-sternum.

The *local* application to the affected muscles of *hot* poultices, made of two-thirds *pilocarpus* leaves and one-third *flaxseed* meal, changing them every two hours, is, in the opinion of the author, the most rapidly successful treatment in acute cases.

For the *pain* and consequent sleeplessness use—

℞. Pulv. ipecac comp..... gr. x
Potass nitras..... gr. v–x. M.

Sig.—In powder, morning and night.

Or, hypodermatically, at the seat of pain, *morphina*, gr. $\frac{1}{8}$–$\frac{1}{4}$, and *atropina*, gr. $\frac{1}{80}$, p. r. n.

Chronic cases; Rest, flannel worn next to skin, stimulating and anodyne liniments, mild galvanism, dry heat, as ironing over the affected part with a common flat-iron, a piece of paper, towel, etc., being placed next to the skin.

Internally, *potassii iodidum*, *ammon. murias*, *sulphur*, *guaiacum* or *arsenicum*, variously combined.

RHEUMATOID ARTHRITIS.

Synonyms. Arthritis deformans; rheumatic gout.

Definition. An inflammation of the joints, accompanied with but slight fever, without suppuration, progressive in character, causing nearly symmetrical enlargement and deformity of various articulations.

Causes. More common in females than in males, and in the weak and anæmic. Among the causes are bad hygiene, exposure, prolonged lactation, frequent pregnancies, menopause, grief, tubercular diathesis, and following attacks of articular rheumatism.

Pathological Anatomy. It is not rheumatism, as the blood contains no *lactic acid*. It is not gout, as *uric acid* is not found in the blood nor *urate of sodium* in the joints.

At first rheumatoid arthritis is attended with hyperæmia of the affected synovial membrane and increase of the synovial fluid. Soon the capsular ligament becomes irregularly thickened, the synovial fluid decreasing. If the process continue, the internal ligament is destroyed, thus allowing dislocations, to occur. The inter-articular fibro-cartilages ulcerate and disappear, as does the cartilages covering the ends of the bones, the ends of the bones becoming smooth and eburnated, and often greatly enlarged.

Symptoms. Either *acute* or *chronic*, the latter most common.

Acute form involves several joints at the same time, and is attended with slight pyrexia.

Chronic form slowly involves one joint, which seemingly soon recovers, and is attacked again, and may never recover, but grow progressively worse.

The *joint* slowly *enlarges*, is *painful*, movement exciting *neuralgic pains* along the limb. Soon the articulation becomes *rigid* or slightly movable after prolonged attempts. Redness and tenderness are wanting. *Crepitation* is distinct after ulceration has destroyed the cartilages.

The hands are first involved, the disease spreading symmetrically from articulation to articulation, until in severe cases every joint is deformed.

Prognosis. If early treatment is instituted, the disease may be held in abeyance for several years. After pronounced structural changes have begun, the malady is incurable, although it may remain stationary for a long time.

Diagnosis. *Chronic articular rheumatism* is often confounded with rheumatoid arthritis; but the former lacks the marked structural changes and the progressive involvement of joint after joint.

Gout differs from rheumatoid arthritis by the presence of deposits of urate of sodium in the joints, the ears, tips of fingers and the bursæ over the olecranon process of the elbow, the presence of uric acid in the blood, and the decided history of acute paroxysms.

Gonorrhœal rheumatism, so-called, has symptoms akin to rheumatoid arthritis, but the history of urethral suppuration clears up the diagnosis.

Paralysis agitans, when pronounced, might be confounded with rheumatoid arthritis, if the examination were limited to the joints, but the whole history, such as the tremor, the gait, etc., should prevent mistake.

Treatment. If treatment is instituted before serious structural lesions have occurred, the author has seen benefit in many cases by the following treatment: *Oleum morrhuæ* carefully and thoroughly rubbed into the affected joints, three times a day, with the internal use of *lithii citras. effervescentes* ʒ j, three times a day, and the following *tonic* mixture:—

℞. Massæ ferri carbonat..... gr. v
Liquor. potass. arsenit..... ♏ v
Vini xerici..... ʒ j
Aquæ..... ʒ j. M.

After meals, well diluted.

Attention to diet, hygiene, etc., are also necessary. When structural changes have destroyed portions of the joint, palliative treatment is the only indication.

GOUT.

Synonyms. Podagra, gout in the foot; chiragra, the hand; gonagra, the knee.

Definition. A constitutional disease, usually inherited; characterized by the sudden occurrence of a paroxysm of severe pain and swelling in one of the smaller joints—the great toe usually—with the presence of uric acid in the blood, and the deposit of the urate of sodium in the structure of the joint.

Causes. *Predisposing;* inherited; male more than female—woman after menopause.

Exciting. Malt and wine drinking, whether male or female; large consumption of animal food; lead poisoning; winter season.

When inherited tendency, may begin early in life; when acquired tendency, after thirty-five years.

The pathological cause consists in the presence of an excess of *uric acid* in the blood, in the form of *urate of sodium.*

Pathological Anatomy. Gout is characterized by the deposit of *urate of sodium* from the blood into the structure of the joints and tissues that are not very vascular. The deposit is associated with signs of inflammation, viz: hyperæmia and redness of the surface, with swelling and effusion in and around the affected joint. The surfaces of the joint are incrusted with chalk-like masses, consisting of urates, which become greater with each attack, finally causing great deformity.

The deposit usually begins in the metatarso-phalangeal joint of the great toe, but other and many joints soon suffer.

The deposits may also be found in the knuckles, eyelids, and cartilages of the ear.

"Crystals of urate of soda are deposited in the tubules and intra tubular tissues" of the kidneys—"gouty kidney"—and may be seen by the naked eye, the kidneys becoming small, granular and fibrous.

Hypertrophy of the left ventricle and the arteries, ending in atheromatous changes, are results of gout.

Symptoms. *Acute Gout.* Occurs in paroxysms; one year's interval between first and second attack; six months usually between second and third, after which may occur at any time.

Prodromes usually precede paroxysm for several days, viz: acid dyspepsia, constipation, headache, etc.

The *paroxysm* begins suddenly, between midnight and 2 A. M., with

acute *pain* in the ball of the great toe, which becomes *red*, *hot*, *swollen*, and *so sensitive* that the slightest touch cannot be borne.

The veins are filled, the foot, ankle and leg swollen, and the limb the seat of sudden spasmodic contractions, which increase the suffering. Slight relief is afforded by elevating the limb. Associated with the local symptoms are, *chill*, *fever*, quickened *pulse*, *thirst*, *coated tongue*, *constipation*, and *scanty*, *acid*, high-colored *urine*, which deposits, on cooling, a heavy *brick-dust* sediment.

Towards daylight the symptoms ameliorate, to return again at sundown, the severity gradually lessening, until the fourth or fifth day, when convalescence is established, the patient, as a rule, feeling better than before the attack.

Chronic Gout. Either result of acute attacks or with a greater number of joints being attacked.

The *paroxysms* occur at any time, but develop slowly, with less pronounced local and general symptoms. Deposits are noticed, the joints becoming hard, knobby, and often distorted. The deposits or *chalk-stones* (urate of sodium) occur about the joints, tendons and bursæ, helix of the ear, etc.

Prognosis. Acute gout rarely fatal; is prone to return, but much depending upon the mode of living.

Chronic gout decidedly shortens life The most serious signs are those indicating advanced renal disease, with non-elimination of uric acid. Gout influences unfavorably the prognosis from acute diseases or injuries.

Diagnosis. An error cannot occur if the history of the case can be obtained, to wit: hereditary tendency, age, sex (females rare, until menopause), mode of living, character of symptoms and presence of the characteristic deposits.

Treatment. For the *acute paroxysms* at once *vinum colchici radicis*, gtt. xv–xx–xxx, every two hours, *well diluted*, either alone or in combination with an *alkali*, or *sodii salycilas*, gr. xx, every three or four hours, well diluted.

For the *pain*, hypodermatic injection of *morphina*, and wrapping the inflamed joint with cotton wool saturated with *liq. plumb. sub-acetat. dil.* and *tinct. opii*.

The diet must be reduced to liquid food.

For *chronic gout*, regulated diet, free action on the secretions, and *lithii citras. effervescentes*, ℥j, three or four times a day, well diluted with water.

To prevent paroxysm, keep secretions acting, regulated diet, systematic exercise and a prolonged course of *alkaline waters*.

LITHÆMIA.

Synonyms. Lithiasis; uric acid diathesis; half gout.

Definition. A condition in which the fluids of the body are saturated with nitrogenized waste, in the form of *lithic* or *uric acid;* characterized by marked dyspepsia, various nervous phenomena, muscular and articular pains, bronchial catarrh, all or any of these associated with scanty, high-colored, acid urine.

Causes. High living, with little exercise; imperfect digestion of nitrogenized food; impaired elimination of uric acid.

Symptoms. Those of *dyspepsia* associated with *irregular bowels*, scanty, high-colored, *acid urine*, sp. gr. 1.024–1.028 containing neither sugar nor albumen, but showing *increased* proportion of *urates*. Also, *depressed spirits*, *impaired memory*, *loss of interest in occupation*, *sleepless nights*, attacks of *vertigo*, neuralgic pains in head, and constant dread of apoplexy or cerebral disease. Also, *pains in joints*, of neuralgic character.

If the condition is allowed to continue, the following organic changes may result, viz: fatty heart; fibroid kidney; enlarged liver, or changes in the cerebral vessels.

Prognosis. If properly recognized and treated, complete recovery will result, although it is of long duration.

If not properly treated, results in some one of the organic diseases mentioned.

Diagnosis. From gout by absence of acute paroxysms and resulting changes in joints.

Treatment. Regulate diet, avoiding much meat and sugar, and all forms of stimulants. Act freely on all the secretions. Systematic exercise. Avoid tonics, bromides, chloral, opium, etc. Long course of alkaline waters. Good results follow *lithii citras.*, gr. xx, t. d., *sodii phosph.*, gr. xxx, bis die, *acidum benzoicum*, gr. x, t. d., all well diluted with water. The author strongly urges the use of *acid nitric dil.*, gtt. x, in half a glass of water, four times a day, with the occasional use of *pilulæ rhei comp.*, at bedtime.

DIABETUS MELLITUS.

Synonyms. Glycosuria; melituria.

Definition. A chronic affection characterized by the constant presence of grape-sugar in the urine, an excessive urinary discharge, and the progressive loss of flesh and strength.

Causes. Most common in males. Occurs at all ages, but most frequently between twenty-five and fifty years. It is often hereditary. Disorders of the nervous, hepatic and renal systems. Excessive use of farinaceous food and malt liquors. Sexual excesses.

The exact *pathology* of diabetes mellitus differs in different cases, and in the present state of our knowledge no exclusive view can be adopted. Still, there are reasons for believing that, in a large proportion of cases, the nervous system is primarily at fault, though the character of the lesions may differ.

Pathological Anatomy. None peculiar to diabetes are yet recognized.

Hyperæmia and hypertrophy of the liver and kidneys are generally present, the result of increased functional activity.

The changes in the lungs peculiar to phthisis are often found in very chronic cases.

The changes in the nervous system are not fully determined.

Symptoms. Clinically cases differ greatly in their course and severity; one class presenting slight symptoms and a chronic course; another group having marked local and constitutional symptoms and an acute course. The symptoms of a typical case may be arranged under the following heads:—

Urinary Organs and Urine. Micturition more frequent and the *urine* increased in quantity. *Pain* over the region of the kidneys. The *quantity of urine* may amount to 4, 8, 12, 20 or 30 pints in twenty-four hours. It is usually *pale, clear* and *watery*, having a *sweetish taste* and *odor*, the *specific gravity* ranging from 1.015 to 1.050. It ferments rapidly if kept in a warm place. It yields *grape sugar* to the usual tests, the amount present varying from *an ounce to two pounds* in the twenty-four hours.

The urea and uric acid are increased. Albumen may be present.

Digestive Organs. An almost constant symptom is *thirst*, with a dry and parched condition of the mouth. At times the *appetite is excessive*, again absent. The breath may have a sweetish odor, the *tongue* irritable, red, and often cracked. *Dyspeptic symptoms* are common, and occasionally vomiting. The *bowels* are constipated, the stools pale and dry. At times diarrhœa may occur.

General Symptoms. The patient complains of feeling *very weak*, languid, and of *soreness and pain in the limbs*. The prominent features are more or less *emaciated*, the *skin* harsh and dry, and the *countenance distressed and worn*.

The mind is often greatly altered; depression of spirits, decline in firm-

ness of character and moral tone, with irritability, are present. Sexual inclination and power are diminished. Defects of vision are present.

The blood and various secretions contain sugar.

Complications. Pulmonary phthisis; Bright's disease; defects of vision from atrophy of the retina or the formation of a soft cataract; boils and carbuncles, and chronic skin affections, such as psoriasis, etc.

Course. The clinical history varies in different cases. In the majority of cases the course is chronic, lasting for years, the symptoms beginning insidiously, and becoming progressively worse, with, at times, decided remissions. Occasionally the disease runs an acute course, death occurring within four or five weeks.

Termination. The majority of cases ultimately prove fatal, the symptoms markedly changing, the *urine* and *sugar diminishing* in quantity, the occurrence of *albuminuria, disgust for food and drink*, and the development of hectic fever or colliquative diarrhœa.

The fatal result usually arises from *gradual exhaustion*, from blood poisoning, leading to *stupor, ending in complete coma*, or occasionally to *delirium* or *convulsions*, or from complications.

Rarely, death occurs suddenly, from *uræmic convulsions* or *uræmic coma.*

Prognosis. Most unfavorable, as regards a cure, it being fairly questionable if complete recovery has ever occurred in a typical case. Still, decided amelioration may take place in the symptoms, and the progress of the malady greatly retarded. The younger the patient the more rapid the fatal termination.

Diagnosis. Diabetes mellitus only exists when *grape sugar* is permanently present in the urine. "It is not the quantity, but the persistence of sugar which constitutes diabetes."

When are present grape sugar in the urine, with more or less increase in the urinary flow, it can be mistaken for no other affection.

Treatment. Impress upon patients the importance of a strictly *regulated diet.* Prohibit or restrict the consumption of such articles as contain *sugar* or *starch*, especially ordinary bread or flour, sugar, honey, potatoes, peas, beans, rice, arrowroot, etc.

The main diet should be of *animal food*, including meat, poultry, game and fish.

A moderate amount of fluids should be allowed, and in a majority of cases *milk* will prove beneficial, although, theoretically, contraindicated. Tea, coffee and cocoa, without sugar, may be allowed in moderation, glycerine being used as a substitute for the sugar.

Regulated exercise is of importance. The patient should wear flannel, and have two or three warm baths every week, or an occasional Turkish bath.

Therapeutical Treatment. *Opium* exercises an influence over the excretion of sugar, but the effect is not maintained. Pavy strongly urges the use of *codeia* in doses of gr. ½–iij, three times a day. Prof. DaCosta suggests the use of *ergota*, which has decreased the urinary discharge and the quantity of sugar in a number of cases. Dr. Bartholow has met with an apparent cure by *ammonii carbonas*. The author has met with decided partial success with *uranii nitras*, gr. j–iij, three times a day, the cases not yet being under observation a sufficient length of time to pronounce them cured, although in two the urine has been diminished from three quarts per day to normal, the quantity of sugar from nine ounces to less than half an ounce, in the twenty four hours.

Potassii bromid., ℥j during the twenty four hours, is strongly urged. The following remedies are recommended by different observers, viz.: *pepsin, liquor potassii arsenites, iodum, potassii iod., sodii salicylas, acidum lacticum, glycerinum, quinina, tinct. cannab. indica*, etc. The evidence in favor of the majority of these drugs is far from satisfactory.

Symptomatic treatment is mostly called for. For emaciation and anæmia, *ferrum* and *oleum morrhuæ;* for sleeplessness and restlessness, *morphina, potassii bromidum, chloral* or *hyoscyamia;* the dyspepsia, lung symptoms, etc., must be managed on general principles.

DIABETES INSIPIDUS.

Synonyms. Polyuria; polydipsia.

Definition. An affection characterized by the habitual discharge of a very large quantity of pale, watery urine, free from albumen and sugar.

Causes. Occasionally hereditary, or diabetes mellitus may have existed in the parent; more common in children or young adults; men are more subject than women; injuries and diseases of the nervous system; exposure to cold; drinking freely of cold water; fatigue; prolonged debility; malaria; syphilis.

The probable immediate cause of the excessive flow of urine consists in dilatation of the renal vessels, the result of paralysis of their muscular coat, caused by derangement of innervation, as the condition can be induced experimentally by irritating a spot in the fourth ventricle, or by section of portions of the sympathetic nerve.

Symptoms. The affection is characterized by *great thirst*, with an increased flow of pale, watery, slightly acid urine, the amount varying from *one to five or six gallons* in the twenty-four hours. The *specific gravity* ranges from 1.001–1.007. *Sugar and albumen are absent.* Urea and the other solids are increased. The *appetite* is voracious, the *bowels* are obstinately constipated, and the *skin* is dry and harsh.

The large flow of urine is usually preceded by various nervous phenomena, viz: *nervousness, irritability, inability to concentrate the mind, vivid imagination, failure of memory, and headache.*

Unless the affection is soon arrested, great loss of flesh and strength result.

Prognosis. Unfavorable as to a radical cure, unless caused by syphilis. Death rarely is due to the diabetes, but to some intercurrent malady that the patient has been unable to withstand, on account of the weakness produced by the diabetes.

Diagnosis. It differs from *diabetes mellitus* by the absence of grape sugar in the urine.

From *paroxysmal diuresis*, by the absence of the increase of urine permanently.

From *interstitial nephritis*, by the greater amount of urinary discharge and the absence of albumen, œdema, etc.

Treatment. If due to syphilis, *potassii iodidum* and *hydrargyrum* are of real benefit. Prof. DaCosta has had success with *ergota* in the form of the fluid extract or the aqueous extract. *Pilocarpus* has been used with success. Dr. Bartholow recommends *galvanism* in cases not cured by potassii iodidum, placing "one electrode to the neck below the occiput, the other to the hypochondriac regions in turn" *Valerian* and *potassii bromidum* have been used. The author has effected a cure in three cases, where other remedies had failed, by the use, internally, of—

℞. Strychninæ sulph..... gr. $\frac{1}{60}$
Acid. hydrochlor. dil..... ♏ x
Aquæ lauro-cerasi..... ʒ ij. M.

Well diluted.

CHOLERA.

Synonyms. Epidemic cholera; Asiatic cholera; malignant cholera; spasmodic cholera.

Definition. An acute, specific, infectious disease, epidemic in the majority of, although endemic in other localities; characterized by violent

purging of a peculiar, rice-water-like fluid, persistent vomiting of a similar material, severe muscular cramps, and a condition of prostration, followed by collapse and death, or of a reaction from the collapse and the development of the typhoid state (*cholera typhoid*).

Causes. A *specific poison*, the nature of which is unknown. Cholera is *not contagious*, in the usual acceptation of that term, but it is unquestionably *infectious*. The evidence seems conclusive that the *cholera stools* are the main, if not the only, channel of infection, and that the great cause of the propagation of cholera is the contamination of the water used for drinking purposes with the stools. Milk may also be the vehicle by which it spreads. Little, if any, danger exists from being in the presence of the affected, although the emanations from the cholera excreta in the atmosphere may generate the disease if swallowed or inhaled. The dead bodies of cholera subjects apparently possess no infective property, "the bacteria of decomposition" probably destroying the cholera germs. One attack does not afford protection against another.

Pathological Anatomy. This is, as yet, far from satisfactory. The morbid appearances in the majority of cases of death from cholera may be thus summarized: The temperature generally rises after death, the body remaining warm for a considerable time. Rigor mortis rapidly ensues, the muscular contractions being often so powerful as to displace and distort the limbs. The skin is mottled and the body greatly shrunken. The blood is darker in color, thick, viscid, and feebly coagulable. The arteries are quite empty of blood, the veins, on the other hand, being distended. The organs are, as a rule, pale and shrunken.

The stomach and intestinal mucous membranes are congested, and present evidences of extravasations and ecchymoses. They usually contain a quantity of whey-like material, having an alkaline reaction, as well as quantities of cast-off epithelium and micrococci. It is thought by many that the stripping-off of the epithelium is a post-mortem phenomena. The Peyer's, solitary and Brunner's glands are usually enlarged and prominent, and occasionally evidences of ulceration are apparent in the solitary glands. The villi of the mucous membrane, as well as the epithelium of the small intestines, are stripped off, leaving the basement membrane, for the most part, exposed. The *liver* is more or less advanced in fatty degeneration, presenting a somewhat mottled, yellowish discoloration. The *kidneys* are congested, the epithelium of the tubules granular and detached from the basement membrane, blocking up the tubes. Dr. Bartholow observed, in all of his autopsies, "considerable hyperæmia and dilata-

tion of the vessels of the medulla oblongata. The constancy of this lesion would seem to indicate a relationship between congestion of the medulla and the cramps."

Symptoms. In accordance with the law of epidemic infectious diseases, the onset, course and character of the symptoms vary in different cases and at different periods in the same epidemic.

The disease may either set in suddenly in a patient previously in good health, or it may follow an attack of rather severe and persistent diarrhœa.

In a typical case there are three stages: *first*, diarrhœa; *second*, prostration; *third*, collapse, or, in favorable cases, reaction.

First Stage. Begins with *chilliness*, excessive *thirst*, coated tongue, unpleasant taste in the mouth, slight abdominal *pain*, and three or four copious, *watery*, yet fecal *stools* during the day, and a decided feeling of *weakness*, the stools rapidly becoming *whey-like*, easily voided, but with force and only slight pain.

Second Stage. The *stools* rapidly increase in number, are voided with a rushing force, and consisting of many quarts of grayish, or whitish, *rice-water-like* fluid, accompanied with forcible *vomiting*, first of the contents of the stomach, mixed with more or less bilious matter, afterwards of the peculiar rice-water-like material; *thirst* becomes most intense, increasing or diminishing with the variations in the number of the vomit and stools; severe *muscular cramps* soon follow, most severe in the calves, although occurring in all parts of the body.

Third Stage. The stools, vomit and cramps continue. The appearance of the patient becomes frightful; the eyes are sunken and surrounded by blackish rings, the nose pinched and pointed, the cheeks hollow, and the lips blue (facies cholerica); the surface cold and moistened with a sticky perspiration; the skin of the hands and fingers have the sodden appearance of the "washerwoman who has washed all day," and if picked up in folds, the fold but slowly disappears. The *temperature* rapidly falls, the *pulse* becomes small and compressible, barely perceptible at the wrist, and the heart beats are scarcely recognizable. The *voice* is weak, husky and sepulchral (vox cholerica), the tongue is like ice, the *breath is cold*, the *urine* markedly diminished and albuminous. The *mind* is not cloudy, but most patients are apathetic and indifferent to their danger. This, the *algid* stage of cholera, or *cholera asphyxia*, usually terminates in death in from three to twelve, twenty-four or forty-eight hours, but *reaction* may be established.

Stage of Reaction. The temperature of the body rises, the pulse gradually becomes fuller and stronger, the countenance becomes brighter,

the stools less frequent and more fecal, the vomiting decreases, the thirst lessens, the urine increases in amount, but continues albuminous, the patient entering a slow convalescence, or *typhoid symptoms* develop, the so-called *cholera typhoid*, which prolongs the recovery for several weeks.

Convalescence is often prolonged and complicated by the development of severe bed sores, boils, bronchitis, pneumonia or parotiditis.

Prognosis. Very unfavorable, the mortality ranging from twenty to eighty per cent. The last epidemic in this country was much milder than former ones. The prognosis is controlled by the general condition of the patient, the age, habits and the development of the algid stage; the very young or very old, those addicted to the various excesses and surrounded by unfavorable hygienic conditions, are more apt to perish than are others; also the rapid development of the *algid stage* is of bad omen.

Diagnosis. The epidemic character, and rapid spreading, and great mortality of the affection prevents its being mistaken for any other disease, although isolated cases are often confounded with cholerine or with cholera morbus, the points of distinction being few.

Treatment. During the prevalence of cholera the mildest cases of diarrhœa ought to receive prompt treatment, for many cases have their beginning as a mild diarrhœa.

First Stage. The remedy of all others is *opium* in some form, to which may be added, with benefit, *plumbi acetas*, in doses of gr. iij–v, repeated p. r. n., and at the same time applying *mustard* over the abdomen. Water and food should be used with great caution, but *ice* is indicated in unlimited amounts, and at times *iced dry champagne*. The patient should be kept quiet, in bed.

Second Stage. The *opium* treatment should be continued, together with the free use of *stimulants*. For the distressing vomiting *ice*, iced *champagne*, *acidum carbolicum* or *acidum hydrocyanicum* may sometimes give relief.

Locally either continue the *mustard* application to the abdomen or the constant use of rubber bags filled with boiling water.

For the *cramps*, hot water in bottles, hot irons or bricks applied over painful parts, or an ointment of chloroform or chloral, or the use of the hypodermatic solution given on page 59.

For the collapse, heat to the surface and the free use of *stimulants*.

If reaction occur, treat indications as they arise, and tonics, such as *ferrum*, *quinina* and *arsenicum*.

All the discharges from the patient should be thoroughly *disinfected* as soon as voided, and the stools and vomited material buried.

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